I have concluded to vary my course somewhat this year — partly with the view of exhibiting at the outset the intimate relation of Hygiene to Medicine. I begin, therefore, with

Etiology, — or

the study of the causes of interruptions or lesions of health — i.e.,

the causes of Disease.

While this subject is connected with General Pathology, it is also connected with Hygiene. As the physician ought to be acquainted with the causes of maladies so as to treat them, the Sanitarian should know their causes in order to prevent them. Hygiene has been not improperly called Preventive Medicine.

Alonzo Clark

Add my book on Cholera.

I use just here some printed slips from a little book of my own, which is now out of print.

MEMORANDA MEDICA.

PART I.

ETIOLOGY.

DISEASE may be *defined as a perversion* either of the *functions* or of the *structure* of the body or of any of its parts.

It is, in other words, a deviation from the normal physiological state or action of the organism, under the disturbing influence of *morbid causes.*

Dr. Williams's classification* of the causes of disease is full, but not consistent or convenient.

The older subdivision into **Percepta, Ingesta, Gesta, Excreta, Applicata,** and **Circumfusa,** is more philosophical, but scarcely complete.

The following classification is proposed by the author:—

CAUSES OF DISEASE.

Hereditary: *e.g.* in tuberculosis; gout; epilepsy; insanity; cancer.

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* *Principles of Medicine*, pp. 37–53.

Dynamic, or functional (by excess or defect of action): *e.g.* over-exertion; over-excitement; emotion; loss of rest; indolence; sensual excess.

Mechanical: *e.g.* wounds and injuries; tight-lacing; position.*

Obstructive: *e.g.* uncleanliness; ill ventilation; neglect of the bowels.

Conditional: *e.g.* extremes of heat or cold; partial exposures or sudden vicissitudes of temperature; moisture or dryness; electrical disturbances.

Ingestive: *e.g.* poisoning; improper diet; intemperance; abuse of medicine; starvation.

Contactive: *e.g.* syphilis; gonorrhœa; itch; hydrophobia; small-pox, etc.

Atmospheric: *e.g.* miasmatic fevers; cholera; yellow fever; erysipelas, etc.

It must be remembered that *very often more than one* cause is engaged in the production of an attack of disease. All such subdivisions exist, therefore, rather mentally than actually. But this does not destroy their usefulness.

Hereditary diseases are not generally *congenital;* it being a *tendency* that is transmitted: a special modification of the organic law or germ-force of the economy. The same period of life is generally observed in the manifestation of this tendency in actual disease.

Some members of a family frequently escape: sometimes a whole generation; the taint again appearing in the next.

Modification of the hereditary tendency may occur; as when the children of an insane person die of meningitis or convulsions; or those of a gouty patient suffer with neuralgia or dyspepsia, etc.

* Syphilis not unfrequently is so.

Vicissitudes:

Dr Moseley (On Tropical Diseases, London, 1804) said that "Cold is the cause of almost all the diseases of hot climates!" & Dr Morat of Madras (quoted by Sir J. R. Martin on Influence of Tropical climates) states that of 3394 cases of Disease at Regimental Hospital of Madras, 1372 were ascribed to Cold, & only 62 to exposure to the sun's rays.

Foucault ascertained by experiments that an animal covered with impervious glaze or varnish suffered always a notable derangement of health; and if the glaze were tolerably com-

Degenerating *influences affecting the* **race.** (MOREL.)

1. **Toxæmia**: from alcohol, opium, haschisch, tobacco; diseased food, as ergoted rye, bad indian-meal, etc.; deficiency of food; lead, mercury, arsenic, phosphorus.

2. **Malaria** and **pestilences.**

3. The "**great town system**;" including private vice (syphilis) and neglect of public hygiene.

Dynamic or functional causes are illustrated by extreme fatigue, *general or local;* sensual excess; indolence;

Mechanical causes: surgical injuries; tight-lacing; position, in certain employments.

Obstructive causes are of great importance. *Typhus* is especially originated by them; and they aid in developing, propagating, and making more malignant *all zymotic* diseases: *e.g.* yellow fever, cholera, puerperal fever, erysipelas, scarlatina, diphtheria, etc.

Conditional causes: *e.g.* excess of *heat* predisposes to diseases of the liver, stomach, and bowels; cold and dampness, to those of the thoracic organs. (*Coup-de-soleil*, and exhaustion from extreme heat.)

Vicissitudes are more often destructive than *extremes.* Electricity. Ozone.

Hygrometric state of the air, very important.

Ingestive causes: poisoning; errors of diet;—

1. As to *quantity.*

   Excess causes indigestion or plethora.

   Deficiency, anæmia and debility; perhaps scrofula.

2. As to *quality*.

Indigestible food may cause cholera morbus, dysentery, diarrhœa, dyspepsia; *putrid* food, septic poisoning.

Deficiency of *fresh vegetable food* causes *scurvy*.

Deficiency of *oleaginous* material, *tuberculosis*.

Excess of animal food, with *insufficient exercise*, *gout*.

Deficiency of *animal* food, with cold and wet, *rheumatism*.

Modifying influences of sex, temperament, and age.

The *diseases of women* constitute a separate department.

As a general statement, the female **sex** is characterized, physically, as compared with the male, by greater impressibility and mobility, and less endurance and resistance.

The **temperaments**, as commonly described, are the *lymphatic*, the *sanguine*, the *nervous*, and the *bilious*. Each of these terms is descriptive,* except the last. I propose that, instead of *bilious*, it be called the *sarcous* temperament. It possesses the greatest endurance, combined with greater activity and energy than the lymphatic, less arterial excitability than the sanguine, and less irritability and impressibility than the nervous temperament.

Influence of **age** on disease.—In **infancy** the functions connected with *nutrition* are the most active.

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* The term bilious may have some meaning as applied to a *morbid* habit of body; but this does not render it applicable to a *temperament;* which is commonly understood to mean such variation of constitution as is compatible with *health*.

The *capillary* portion of the vascular system is most mature.

The *ganglionic* apparatus is predominant in the nervous system. Excito-motor & Excito-secretory morbid actions.

The *tegumentary* surface is delicate and impressible; & so is the alimentary canal.

The *heat making* processes are less potent than during adolescence and maturity.

Some organs, as the bones, lungs, etc., are not anatomically developed to their final state. Lobular Pneumonia? Bailly & Legendre, collapse, &c.

The period of *dentition* is especially marked by reflex excitability. It is not, of course, a morbid process; but &c.

During **childhood,** many of the same characteristics remain. Activity of the *glandular* apparatus is also conspicuous; and the *spinal axis* begins to assume, in the nervous system, a greater relative importance.

Fibrin abounds in the exudations resulting from injury or inflammation during childhood. Plastic or croupous exudations.

The diseases most frequent during **infancy** and **childhood** are—

Cutaneous eruptions;
Disorders of digestion; e.g. cholera infantum.
Convulsions; especially when teething.
Glandular derangements; as scrofulosis.
Pseudo-membranous inflammations; croup.
~~(Lobular pneumonia~~; ~~epistaxis.)~~

The exanthemata, hooping-cough, and mumps are *not peculiar* to childhood; although comparatively few persons pass through adolescence without having had most of them. and controlled by Cholera.

During **adolescence,** the *arterial* circulation attains its height of force and fullness.

The *voluntary motor* energies are especially developed.

The *emotional* impulses are most powerful.

In the female, *menstruation* assumes great importance.

The most frequent disorders of **youth** and **early maturity** are—

Active congestions;
Inflammations;
Hemorrhages. (scrofulosis?)

Tuberculosis, which, during *childhood*, most frequently affects the glands, in *adolescence* selects much more often the *lungs*. Facts bearing on Virchow, Offshoots Hueppe's view

The period of **middle life** should present the most normal balance of development and function, with no special liability to disease. But such morbid tendencies as either *inheritance* or *habit* may have produced are apt now to display their effects. Thus gout, lithiasis, dyspepsia, etc., arise. gin-liver — stricture — cancer — insanity —

As **old age** approaches, the ~~venous~~ circulation becomes more sluggish.

The aggregate vital energy of the system is diminished.

Atrophy and degeneration advance.

The aged are especially subject to—

Passive congestions;
Dropsies;
Catarrhal affections;
Urinary diseases; — enlargement of prostate, &c
Apoplexy;
Morbid adiposity;
Fatty and other degenerations of the heart, brain, liver, etc.

Death from exposure to cold. —

End of 28th Lecture, 1872.

End of 32nd Lecture, 1873.

Go back to (2) & (3)

On Sex,

Quotes Dr. H. R. Storer of Boston — (Trans. of Am. Med. Assoc., 1865);

"Van Helmont was not far wrong when he contended that woman was what she is, in health, in character, in her charms, alike of body, mind & soul, because of her womb alone. Nor am I to far wrong, I candidly believe, in attributing the major part, not all, of her characteristics in disease, mental as well as bodily, also to this self-same womb."

Exaggeration!

It is ovaries more than wombs that make sex; and it is neither that make woman! The difference is chiefly cerebral.

over

Uterine, Ovarian, &

Mammary affections, &

Hysteria & Puerperal Fever, &

Puerperal Mania are

characteristically Peculiar

Diseases of females.

Ex OW to Temperaments.

Temperaments.

Temperaments.

What is ~~temperaments~~ temperament?

Individual constitution of body and mind, with special tendencies which, when extreme, become morbid, but a marked degree of which is quite compatible with health.

Or, in other words,

~~Temperaments are peculiar characters of body & mind, strongly marked, yet compatible with health.~~

We are all familiar with personal traits and differences, in eyes, hair, figure & disposition, & Galen, Epitomizer and writer of since the 2nd century of the Christian era.

Old classification:

Sanguine, Choleric, Melancholic, Phlegmatic.

Newer:

Sanguine, Nervous, Bilious, Lymphatic.

of these the second best, — except "bilious". —

Sanguine, tiger or leopard; nervous, deer or gazelle; lymphatic, bear; fibrous, elephant; rhinoceros.

(3)

Richerand &

Dr Hammond's account of the includes mental characteristics

Sanguine temperament: — (Hygiene)

"Inconstancy is the predominating influence. Good resolutions are formed but to be broken. Friendships are contracted to be soon abandoned for others, which in their turn are given up. In love the individual of sanguine temperament is fickle and faithless and cares less for his honor than his pleasure. —

Sanguine: all this is altogether unjustified.

Alexander the great

Marc Anthony ?: as Shakespeare portrays him

Chas II of England — (Hammond)

Murat — Custer — good examples of the

Sanguine temperament

Mercutio in Shakespeare.

Fibrous tissues & fibrous.

Temperaments.

Sanguine temperament — abundance, sometimes redundance of blood in proportion to solid tissues — circulation excitable or easily heightened in color — Complexion rather florid: less constantly, skin fair, eyes and hair light. Active — excitable — hopeful — mutable.

<——————> Inflammations, Congestions, Hemorrhages.

Lymphatic, — predominance of lymph: — fewer red blood corpuscles — organic functions paramount — a sort of mollusccous life: without color & flabby — slow & languid, bodily and mentally.

<——————> Dropsies — Scrofulosis (not peculiar, however) — Tubercle — Fatty Degeneration.

Nervous, — Sensory & excito-motor nervous system susceptible excitable, irritable, — ~~not strong~~ rather than strong. Extreme examples of this are Slender, pale, wiry: usually, not always, eyes & hair dark, complexion dark, or white, not fair.

<——————> Convulsions — Neuralgias — Insanity, Delirium.

Fibrous, — ("Bilious or Melancholic" ~~blue~~) solid tissues — bone, cartilage, ligament & muscle predominant; not excitable, not active, but enduring in strength; tough. Eyes gray, hazel, or blue sometimes ~~[illegible]~~ black: this temperament is best for persistent work and wear.

Least predisposition to disease; most like the balanced temperament.

over

(2) — of "~~Bilious~~" Fibrous temperament —
~~(Hamond, from Richard)~~

Socrates — Alexander (?) & Julius Cæsar,
Mahomet (Sampson) Peter the Great,
~~Calvin?~~ John Knox — Cardinal Richelieu,
Cromwell,
Goethe, Washington, Franklin, & Grant —
~~Add~~ Napoleon 1st
~~Napoleon III constitutionally inherit the lymphatic type.~~

(1) — of Nervous temperament —

Fred. Great of Prussia —
his friend Philosopher Voltaire — Schiller, & Cowper — Keats
Pope the English poets —
Beethoven
John Randolph of Virginia —
Rufus Choate of Boston
& Geo. McClellan, the
father of the Union General, Thomas Shillitoe.

(2) — ~~Nervous~~ of Lymphatic Temperament —
See
Rembrandt, Thomson, Wordsworth, Rossini —
Melancholic Temperament.
Dante — Tasso — Milton in his old age. —

Sandor

Not many examples of pure, single temperaments; mostly they are combined; as sanguine-nervous — fibro-lymphatic — fibro-sanguine &c.

See page 6.

~~Infancy, lymphatic; Youth, sanguine; Middle life, fibrous; Age, lymphatic &c.~~

Temperament may be altered; though seldom or never rapidly. Something may be generally done towards this.

Sanguine should be moderate in eating, especially of animal food; — exercise & sleep a good deal: say 8 hours nightly. (though need not be so much; 8 or 9 hours;)

Nervous should sleep a great deal; exercise regularly and actively but not excessively; ~~moderately~~; drink milk, not coffee; & not indulge even in cocoa or chocolate rather than strong tea; nourishing, well animalized diet.

Lymphatic should eat sparingly, though of rather concentrated food, & live an active life; indulging in less sleep than is needed by the nervous: ~~6 to 7~~ hours nightly.

Fibrous will need no pains to alter it; but should take care lest indolent habits allow it to slide into the lymphatic; — or lest dissipation or over-work change it to the nervous. Balanced temperament.

~~Nervous: German, Fibro-lymphatic: English, fibro-sanguine; Irish, Sanguine; Turks, Lymphatic; Japanese, fibro-nervous.~~

Infancy is apt to be lymphatic;

Youth, sanguine;

Middle life, fibrous;

Age, lymphatic.

Nations, or at least races, have predomin. temperaments.

French, nervous;

Irish, sanguine;

English, fibrous or fibro-sanguine;

Germans, fibro-lymphatic;

Turks, lymphatic; (sanguinary enough sometimes, though not sanguine.)

Japanese & Chinese, fibrous;

American Indians, the same;

Our Americans (Euro-Americans),

nervo-fibrous: cool and intense;

"veins of fire coursing under a skin of ice".

Abraham Lincoln & Stonewall Jackson were almost typical examples of this temperament.

(Back to p. 5)

No more credit or blame for temperament than for color of eyes, complexion, or hair.

Nervo-

Miss Blythe, Sanguine temperament.

Prof. Fest, nervo-fibrous.

Prof Ladd, Fibro ~~nervo~~ sanguine.

Mrs Robinson, Nervo-fibrous.

Miss Baldwin, Fibro-

Miss Hadley, Sanguine.

Miss Sawyer, Nervo-sanguine

Miss Bemis, Nervo-lymphatic-

Miss Tracy, Fibro-sanguine-

Prof W D Hartshorn, Sanguine-fibrous-

Dr H.H. - Original sanguine, ~~temp~~ lymphatic.

Mariechen Smith, Sanguine,

Mamie Brown Nervo-sanguine-

Fannie White, Fibrous, ~~easy~~ to be almost pure nervous.-

No good specimen of Lymphatic among Our Scholars.

Balanced ~~temperament~~ promotes by regular, wholesome life,

over

Practical application:

We should make the most of our natural temperament, — endeavor to improve it if we can — & to preserve its best traits and advantages, at all events, without degeneration; and remember that temperament alone never makes or determines character, attainments or useful achievements. Some of the noblest men and women of all time, of the most beautiful character and most admirable life, — have been such in spite not only of unfavorable temperaments but even of great bodily weakness and disease. In any case, we are judged not according to that which we have not, but according to that which we have.

soon as cholera of smallpox, or diphtheria of typhoid fever. The introduction into the blood of the specific cause begets the specific disease.

From this law has been deduced still another fact inestimable in its value: and that is that the spontaneous generation of any one of these diseases is impossible and unknown. Nowhere now is there any question of autochthonous genesis of infectious disease. Everywhere is recognized a house where the disease is indigenous, and a route along which it is spread. The mouths of the Ganges and Brahmaputra are the centres of cholera, lower Egypt of the plague, the Antilles of yellow fever, Ireland of typhus. So far as these diseases are concerned, whose course can be most distinctly traced—cholera and yellow fever, for instance—the line of infection, when accurately pursued, is always found to correspond with the line of transportation by water or rail. The increased velocity of travel in our day, with the correspondingly increased swiftness of the transportation of disease, forms the embarrassing element in tracing the course of disease to its original seat. A week and two days may now suffice to introduce from Europe to our whole country a sweeping epidemic of cholera, and, under favouring conditions, but a few days are required to carry yellow fever from New Orleans to New York. Thus the advanced knowledge of sanitary science in our day, to which we may chiefly ascribe our comparative exemption from the devastating epidemics of ancient times, is counteracted to some extent by the increased facilities for transportation of disease to new centres, the absence of which alone saved the human race in the middle ages from almost utter extinction.

Smallpox first showed itself in Germany in 1493, an importation from the Netherlands, but it was not until 1527 that it was transported to our country, making its first appearance in Mexico, slaughtering myriads, and then gradually extending over the whole of North America. Scarlet fever, which was first seen in our country in 1735, reached Iceland in 1827, South America in 1829, Greenland in

1847, and Australia in 1848. Measles has not yet been carried to Australia. Cerebro-spinal meningitis, in every respect the most irregular of all epidemic diseases, first fell upon our country in 1806. The ocean was for all time an impassable barrier to cholera, the most wide spread and fatal of all the acute infectious diseases, until it was directly conveyed across in the memorable year of 1832.

The last case of measles in the Faroe islands occurred in 1781. The disease then died out and was almost forgotten, when, in 1846, an individual sick with it came ashore. The inhabitants at that time numbered 7782. Of these, over 6000 fell sick with the measles, and the 1500 that escaped owed their safety to rigid quarantine. On the affected islands, the attack was nearly universal, only the very aged, who had suffered with the disease during and previous to 1781 were spared.

No point in prophylaxis could be of greater value than the recognition of the exclusively parental birth of acute infectious disease.

The close observation of a long series of years has already put us in possession, moreover, of most of the data in the natural history of each of these diseases Thus we have learned first that manifest attack does not follow immediately upon exposure to the disease. There lapses first a period during which the disease lies latent in the body, hatching as it were, the so-called period of incubation. In some cases the length of this period may be determined to a day, by the experiment of inoculation. Thus, the incubation period of vaccinia is 3 days, of smallpox after inoculation 2 days, without inoculation 12–13 days, of scarlet fever 4–7 days, of typhus 7–14 days, of typhoid fever 12–16 days, of measles 10 days, of intermittent fever 1–14 days, of syphilis 2–4 weeks, of the plague 2–7 days, of cholera 2–3 days, of yellow fever 2–9 days, of hydrophobia 3–60 days.

Then supervene the various stages characteristic of each disease, each stage, of more or less definite duration, marking off a definite phase in the course of each disease. We know, again, what are the infecting structures, what is the period

See my book on

Zymotic Diseases

"Enthelig"

Theory of Zymosis —

Liebig — cathlysis —

an analogy — but

strong — the denied by some —

Dr Snow — "Continuous molecular change."

Explain Dr J. Simon's theory about the

"one attack" diseases — Vaccination

A causation

The theory important practically

or the theory of therapeutics,

or what, as it is not my

province to dwell at all, I

may merely send you a few

recent interesting proposed use in

Zymotic diseases of antiseptics as the

Sulphites — first started by Prof. Polli of Milan — of carbolic acid.

Other view: — something added by vaccination, instead of exhausting.

Cerebrospinal fever, relapsing fever,

I propose to conclude these remarks upon the causation of disease, by some brief consideration of what may be called the **special etiology** of certain diseases; as ~~miasmatic~~ malarial fevers, yellow fever, typhus, typhoid fever, cholera, cholera infantum, plague, puerperal fever, erysipelas, and diphtheria.

All of these might without impropriety be included under the head of **atmospheric** causation; as, being all of them either *endemic* or *epidemic*, we can scarcely avoid the supposition that, whatever the *nature* of the cause, *the atmosphere is the medium* of its *transmission*. Yet, with the exception of typhus, we can hardly be said to have any *demonstrable* knowledge of the cause of either of these formidable diseases. But we must not undervalue the significance of such facts as we do possess; one or two links, only, being wanting in the chain of evidence regarding each, in order to form a reasonable theory.

No subject can be more interesting to the medical man in this country than the history of our own endemic fevers, of which the **autumnal** (and vernal) **intermittent** and **remittent** are by far the most prevalent.

Malarial

The principal well-ascertained facts bearing on the *origin* of ~~these~~ fevers are as follows (see *Drake on Diseases of North America*, vol. i.): — In all continents. —

1. Autumnal fevers are always **localized** in their prevalence; having certain bounds, even when considered epidemic. Sometimes the bounds are narrow — a grove &c. *

2. They **never** prevail in the *thickly-built* portions of **cities**. A case or two now and then: squares; & in N. Y. city, near old undrained stream-courses.

3. A mean summer temperature of at least 60° is neces-

* A curious disposition to refer away malaria from localities generally.

sary to their development; a continuance of **decided warmth** for more than two months being required.

4. They occur with greatest violence in **tropical** or **sub-tropical** climates. Yet some regions, in which the summers are both hot and long, are exempt. Jungle-fevers in India — Africa — S. C. Georgia

5. They prevail *least* where the surface of the earth is *rocky*, and *most* where the soil is loaded with **organic matter.** To this there are a few exceptions. *

6. The existence of **surface-water** favors their development. They haunt chiefly the borders of marshes, shallow lakes, and slow streams; but not exclusively.

7. Those dwelling upon the **shores** of large lakes are more subject to them than those who navigate their central waters.

8. The vicinity of the **sea** is comparatively **free** from their invasion, unless inland *marshes* lie near it.

9. In the midst of unbroken forests they are rare, but are apt to follow the **clearing away** of woodlands.

10. Heat and moisture may exist together in abundance (as on the Gulf of Mexico) **without**—*other* conditions being absent—producing these fevers.

11. Organic matter has been detected in the air of ~~miasmatic~~ malarial districts. They generally abound in organic decay.

12. No peculiar gases or other chemical agents, not found elsewhere, have been isolated or recognized in such regions.

13. No electrical peculiarities have been proved to exist in ~~miasmatic~~ malarial localities.

14. The draining of dams or ponds, or other exposure of surfaces, previously covered by water, to the sun, has

plete, it died after a time, in some cases after only a few hours.* Becquerel & Breschet† repeat-
ing the experiments of Fontanelle, remarked that the suppression of cutaneous
exhalation was immediately followed by a fall
of temperature, internally as well as externally.
A rabbit had internal temperature thus lowered in ½ hour
from 38°C to 32°C, & in an hour to 24.5°C. Another,
in an hour & ½ fell from 38°C to 20°C, — the air
around being 17°C. In an hour and a half more it died.
Chossat found that starvation, after a few days, lowered
the temperature of animals much; the warmer they were kept the longer
it required to end life by privation of food.

* Comptes Rendues des Seances de l'Academie Royale des
Sciences &c, tom. VI. p. 369.
† Comptes Rendues, tom. XIII, p. 791 et seq.

~~Lordy 6 2 4 exposure & the sun, &c.~~ 27

*24 Dr Heyne "On the Hill-fevers of the Southern Peninsula of India" mentions some ranges of hills of granite on which malarious malarial fevers prevail, — & other ranges of hills constantly free from fevers. How high these hills are I do not find mentioned. Kirkpatrick (Bengal army) & Mason & Martin found the idea of ferruginous earth being malarious; Sir W. Napier, limestone; Sir W. Napier, clearing.

~~Brit. army in Spain (Wellington's) exposed to hard plateaus, suffered much from fever. (R. Miller – Sud. Standt).~~

A. von Humboldt (voyages, &c, chap. XX, vol. II. p. 299) speaks of missionary villages of the Atures & Maypures, near the cataracts of Orinoco, being desolate from fever, & says that they are located on the bare granitic plateaus that border the great river; the rocks being smooth & black, without any decayed veg. matter. The black crust is very thin, consisting of oxide of iron & manganese. Thermometer, day 118.6°F, night 96.8°

Dr Hooker, in his Himalayan Journals, describes the Country of the Sheels, in India; which in the dry season is marshy, but in the wet is inundated. There are immense accumulations of vegetable matter in the marshes — chiefly decomposed grass and leaves. "The climate is excessively damp and hot throughout the year, but, though such and interminable swamps, the place is perfectly healthy." "Though no Situa. can appear more malarious than Silpat & Cachar, they are, in fact, eminently salubrious." Great Dismal Swamp.

Malarial diseases prevail on the heights of Gibraltar. They were rife among the English troops who, during the Spanish campaign of 1809, encamped upon the Guadiana, on the rocky heights of the confines of Portugal. Diseases referred to malaria prevailed among the British soldiers who, in 1794, were quartered at Rozendaal, in South Holland, upon a sandy plain, incapable of supporting any other vegetation than stunted heath plants. On the Alentejo land, situated upon the Tagus, opposite the city of Lisbon, where the soil is superficially dry, sandy and flat, residence exposes to malarial fevers. ~~Finally, in the case cited by Dr. Wood,~~ soldiers of Britain, when stationed upon a dry, sandy plain on the island of Walcheren, suffered unprecedented losses from miasmatic diseases.

Tissues & fungus-mould.

~~Surrounded~~ by low lands

but subject to inundations.

smaller streams, had in fact *ceased to be such*, and were no more than lines of detached pools in the courses formerly occupied by the rivers. . . . In some of the hilly ravines that had been watercourses, several of the regiments took up their bivouac, for the sake of proximity to the stagnant water-pools that remained among the rocks."

I concur with Dr. James Johnson in the opinion, that no one familiar with the habitats of malaria, can find anything subversive of the ordinary theory of its origin in the occurrence of marsh fever among soldiers bivouaced *for the sake of convenience* "in the bed of a half-dried ravine and near stagnant pools." It was in just such pools, in the rocky bed of the Mississippi river, laid bare

1. The exemption of some situations noted for both heat and moisture of the air; as at Key West, Pensacola, Balize, etc. + The Jheels in Hindostan —

2. The prevalence of remittent and intermittent fevers in places but a short distance from the above, or situated precisely like them with respect to heat and moisture; as at the head of Pensacola Bay, etc.

3. The occurrence of these fevers in a few places where the air is comparatively dry. ⊕ [redacted]

4. The comparative immunity of *in-door* operatives, in some *large manufactories*, in an air constantly saturated with heated vapor, and in ~~miasmatic~~ malarial districts.

5. The frequent *remoteness* of the *attack* from the *time of exposure;* unlike all other effects of merely *conditional* or physical causes.

We are Driven thus, by exclusion, to the view, that a **material poison,** malarial or vegeto-animalcular (*i.e.* inorganic or organic), is the *causa causans* of remittent, intermittent, and pernicious fever (*all one disease, except in grade*). Strong reasons urge the further preference of the **organic** phase of this theory.

1. The law of the *diffusion of gases* interferes much *less* with *this* than with the hypothesis of *inorganic* malaria.

2. Heat and moisture, so favorable to autumnal fevers, also develope the greatest abundance and luxuriance of *animal and vegetable* life. Tropical regions, too, furnish by far the most numerous species of plants and animals having *active* and *destructive properties.*

3. The *non-discovery* of microscopic germs or organisms peculiar to the air of ~~miasmatic~~ malarial regions does not *prove*

(Look for remainder on among notes)

repeatedly been followed by fever. The first cultivation of a new soil has been attended in the same way; but continued culture is accompanied by a diminution of the endemic. This has been a familiar fact in the Western States.

15. A period of **incubation**, often extending to from one to three weeks, is common after exposure to the circumstances of a miasmatic district. Persons *exposed in the autumn*, and removing, have sometimes been attacked *the following spring*. The cause has, therefore, a power of **latency** in the system. (Brit. army)

16. Some seasons are healthy, and others unhealthy, in the same place, without any *known* difference in its physical conditions or circumstances. (See back Remark).

The **hypotheses** which have been started upon these facts are chiefly as follows:— Dr Craig of Ann, Dr Littell of Phila.

1. The **electrical** hypothesis. (Sir J. Murray.)

2. The ~~meteoric~~ Condition hypothesis; which considers changes of atmospheric *temperature* and *moisture* sufficient to produce these disorders. (*Ozone*, Gaillard.) Rehan

3. The ~~Malarial~~ Chl hypothesis; which supposes the existence of a peculiar gas, generated under certain circumstances, the effect of which upon the body is poisonous.

4. The organic or **vegeto-animalcular** hypothesis; which ~~imagines~~ infers the existence of microscopic organized growths, which enter the system and produce these peculiar morbid results.

The **electrical** speculations of Murray, Craig, Littell, and others are interesting, as calling attention to a class of facts which have been too much neglected. But they afford no basis for a theory of the etiology of autumnal fevers.

The ~~meteoric~~ Conditional hypothesis is **excluded** by the following considerations:—

their *non-existence.* It only leaves us without the power of *demonstrating* the theory.

4. The *inequality* of *different* seasons, as to the presence or absence of endemic fevers, suggests a parallelism to the unequal abundance of reproduction among animal and vegetable organisms.

5. The fact that *cold, a hard frost, always arrests* the prevalence of autumnal fevers (unless in persons already affected by exposure), is significant of the probably organic nature of their cause.

6. The *latency* of the infection, for weeks, or even months after exposure, is at least as well (if not better) explained upon this hypothesis as upon any other.

The *limited, endemic* character of these diseases, moreover (unlike that of cholera for instance), enables us to form the still more definite conjecture, that the special cause of ~~miasmatic~~ malarial or "country fever," the autumnal fever of this country (bilious, remittent, intermittent, congestive, etc.), is a *microphyte; i.e.* a minute vegetable organism, inhabiting certain localities only.

Lastly — Prevention. +

The etiology of **yellow fever** has been, and yet is, the subject of voluminous and zealous controversy. It has narrowed down very much, however, ~~that it will not, in view of the necessity of brevity, in this work, be too great an exercise of dogmatism to pass over the *argument* entirely, and state only the *conclusions* arrived at by the author, in common with a majority of those who have devoted much attention to the facts. (See *La Roche on Yellow Fever.*)~~

~~Referring the reader to the method of reasoning followed in connection with the subject of *miasmatic* fevers, and~~

Dr Salisbury — "Palmella" — Am. J. of Med. Sci. — after Dr J. K. Mitchell & Darwin — Practice — Splenic fever &c.

Paper on this here.

Premising that yellow fever is to be considered as entirely a *distinct disease* from remittent fever, the important ~~theoretical~~ conclusions (of the truth of which I am very well satisfied) are these:—

Refer to LaRoche

1. The cause of yellow fever is a **specific material**, *probably* a microscopic organism, the difficult transportation of which over long distances makes it also probable that it is *vegetative:* a *microphyte.*

2. This morbid cause or **poison** may, upon this theory, be assumed to be propagated by or through extremely minute but numerous *germs;* which germs (like all others) have certain **peculiar conditions** of vitality.

3. They are seldom developed north of 48° north latitude, or south of the equator. Their "*habitat*" is the shores and islands of the **Atlantic Ocean** and its connected seas, the Gulf of Mexico, and the Western Mediterranean. This **exclusiveness** is remarkable; as it is a *fatal* argument against the theory of its *contagious* transmission. Thus, yellow fever **never** *visits* (unless in a single possible instance)

The Pacific Coast of America;	Bombay;
Canton;	Alexandria;
Calcutta;	Constantinople;

Athens; nor any of the *interior* cities of either continent.

On the other hand, it visits **often**

The Western Coast of Africa;	Vera Cruz;
Tropical islands of the Atlantic;	New Orleans;
North Coast of South America;	Mobile;
West India Islands;	Savannah;

Charleston; and **occasionally**, also,

Rio Janeiro;	Gibraltar;

This may be an appropriate time to introduce some remarks upon Minute Vegetation as causative of disease in the human body:—

About the year 1845, ~~15 years ago~~ I heard the late Prof. O. K. Mitchell, then of Coll. College, deliver a very able discourse in support of a theory which, so far as I know, was original with him: that fevers generally, and most particularly autumnal fevers, depended for their origin upon aerial emanations from fungous plants; whose abundance, according to observation, corresponds very often, with the prevalence of those fevers.

Before that time, about 1836, Remak, & in 1839, Schönlein of Germany, had made out the vegetative nature of

certain microscopic filamentous forms found constantly ~~up~~ ~~with~~ about the diseased parts of the scalp in favus; — & Fuchs, Langenbeck, Emby, Eichstedt & others, neard all of Germany, described analogous growths as characteristic of a number of cutaneous diseases; as, ~~the~~ different sorts of Tinea; — namely, besides the favosa, the tonsurans, & decalvans, — sycosis & chloasma.

Whether the presence of these epiphytes, as they are called, be the cause (as I think much most probable) or the consequence of, or a mere coincidence with the skin disease, — is hardly yet finally settled: but their existence is established: as well as that of the Oidium albicans in the mouth & throat in Thrush or muguet. E. Wilson denies that they are the cause.

Berle says ~~now that~~

"germinal matter" — semi-vital,

may be transported & morbidly developed.

"Microzymes" of some, lately (Burdon-Sanderson)

A Darwinian theory of the origin

of disease-causes by evolution under

natural selection has been put forth

and defended in an elaborate volume by

a late English medical author, Dr. Jas. Ross.

Others, since 1840

Schroder & Pasteur, ~~later~~, in have especially studied numerous forms, many of which are vegetable, floating in the air. [Samuelson of England has also examined these investigations.

Torulæ, Mycodermata, Mucedines, & Bacteria are particularly abundant.

The latter, Bacteria, Davaine, in 1863, published at Paris some remarkable observations upon; finding them numerous in the blood of diseased sheep, suffering with splenic apoplexy; and not in the blood of sound sheep. They are very minute cylindrical filaments, which absorb oxygen. They are not destroyed by SO_3 or caustic Potassa.

Pasteur asserts that Torula produce alcoholic ferments; the Mycoderma Aceti, the acetous ferm.; another kind the Cactic; Vibrios, which on long exposure to O_2, — the butyric. Pouchet disagrees with Pasteur and

Hallier — Thomé — & Klob

~~& Hedame~~

~~Klob~~ (See Am. Naturalist, June 1868

& Med. News same month) asserts

the presence of a peculiar microphyte in cholera

stools: Hallier believes it to be a vice-fungus — unoccupied — grown

in India; & thence ~~transported~~ over the world ^ that

the bowels of those ill with cholera. The same

ingenious observer, having sent to him morbid speci-

-mens from the Texas Cattle-disease of a few years

ago — asserted the discovery of an analogous fungus

the Coniothecium Stilesii, which he predicted should

be found growing among the cattle pastures of

the West. But industrious researches of at least

one competent botanist, Ravenel, have failed to find it there.

Prof. H. C. Wood, of our faculty, contributed not

very long since a very able article to the Am. Journal of Med

Sciences controverting the tendency many have shown to run

the vegetative theory of disease into the ground. But —

~~Rev.~~ ~~M.J.~~ Berkeley, ~~F.L.S.~~ a distinguished English botanist, in connection with the history of the fungus foot of India (Chionyphe Carteri) or Mycetoma which is fatal unless removed by amputation throws out the conjecture that hospital gangrene may be produced by fungous germs in the foul and ill ventilated places.

It is still very probable that a more definite knowledge of minute life, both vegetable & animal will aid us essentially in investigating the origin of diseases. (Germ-Theory of Disease. Tyndall – Lectures &c.)

Causation of Yellow Fever.

1. It is pre-eminently a local-ized disease; mostly endemic, sometimes epidemic. Its geographi-cal range is limited.

2. It is not contagious; that is, its cause is not produced in the human body. It is infectious; that is, its cause prevails at cer-tain places and at certain times, so that all going thither are exposed to it.

3. It is certainly portable by ships; presently, though rarely, by fomites.

— Preventives — Removal — Disinfection.

Prophylaxis of Malarial Fever.

1. Remain within doors from an hour before sunset to one or two hours after sunrise.

2. Never go over low, damp malarious ground without warm clothing, or with an empty stomach.

3. Light one or two fires in the house every damp day, whatever the temperature or the time of year.

4. If much exposed, take 6 grains of Sulph. Quin. daily.

Salisbury on Malaria.

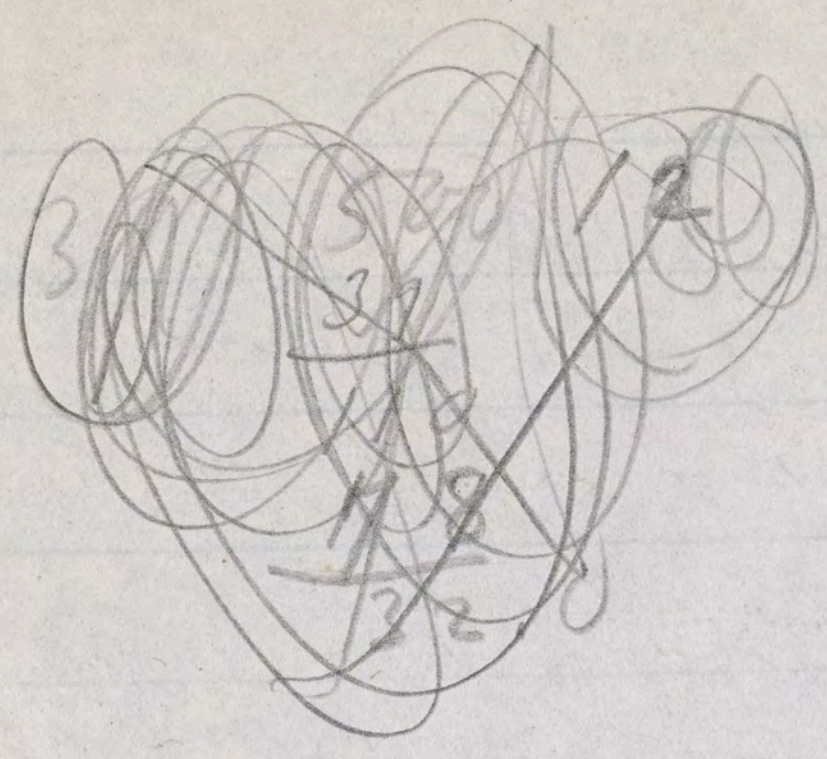
Am Journ of Med. Sci. Jan. 1866.

1st, exam. microscopically expectorations & secretions of ague patients resident in strongly malarious Dists.

Many veg. cells & spores, — laminated bodies —

but the only constant ones were certain minute oblong cells, single or aggregated, containing each a distinct nucleus, surrounded by a smooth cell wall, with a highly clear & apparently empty space between the cell wall & the nucleus.

& Salisbury considered these not fungoid — but still simpler in structure — algoid; the simplest kind of vege organization —



Next, to trace their origin. He suspended plates of glass all night over the malarious swamps.

Not under, but on the top of the glass plates, the next day, he found ~~multitudes of these amoeboid~~ cells — Palmella.

Then he took from the prairie bog, whose surface was broken by the tread of cattle some fresh earth, with a mould upon it, the microscope showed ~~this too to contain multitudes of~~ the Palmella.

To determine the precise habitat of these organisms he arranged a number of plate of glass, with funnels to concentrate the air. At different heights they were more or less prevalent.

At last he fixed that their range was from 350 00 feet above the low levels in Ohio; near Nashville Tennessee, Memphis, 00 to 100 feet;

& that they are many elevated above the earth into the air between sunset & sunrise; the day air being quite free from them.

& that intermittents do not extend to higher levels than they reach.

Several instances then came successively under D. S.'s notice, in which ague occurred for the first time in new localities.

In one, a new ditch was dug. There he found the pulvillae developed.

In another, excavation was made for a ~~[illegible]~~ reservoir; and the same observation recurred.

In a third, a drained pond was dug up to plant vines & again, more pulvillae.

Dr Salisbury had the "ague-
patch" as he calls it, on this
case covered with Dry straw;
thereafter, No more ague came of it; also,
the palmella then ceased to form
on it. ~~The fly~~, he experimented
in producing ague by placing
boxes of marsh earth containing
the palmella, under the windows
of two young men at night,
in a mountainous & malaria
-larious region. I believe he obtained their consent to the experiment.
On the 12th ~~the~~ days both
had chills. People sleeping on another
story of the same house had none.
The same ~~was~~ repeated in
another case — when 20 of B similarly exposed were affected with ague

Dr Salisbury ... gives the name of Eremiasma — or Earth miasm — to the most important of these organisms. Several forms were found — red, pea, lead colored, & yellowish a peculiar white, making several genera — all the spores are oval, oblong, with double walls.

Certain these are remarkable observations. All such require confirmation from more than one observer. Science always requires this, inexorably, of any alleged discovery, no matter what confidence is deserved by anyone both for his honesty & judgment.

I think it not unfair to add, that some other analogous investigations, made by Dr. Salisbury since the above were published, have not been received with entire favor by leading micrologists.

In the same number of the Am. Journ. of Med. Sciences, however, Dr Edgar Molden, then of the U. S. N., narrated his observations on board a vessel of war during the late civil war. He observed the coincidence on shipboard of a number of cases of intermittent fever with exposure to the air of the storeroom, which had an unusual close connection with the bilge of the vessel. A good deal of veg. mould was in the storeroom, & he ascribed the malarial disorder which broke out to some extent thus tends to confirm Dr Salisbury's view.

over.

Prof. Hannon of Brussels ~~lately has~~ published in (1867) the statement that he learned in 1843 from Prof. C. Morren that he had found emanations from certain cryptogamous plants to produce ague. This seems to have been an anticipation of the observations just mentioned.

Dr. Bolestra, 1870, published an account of his investigations in the malarious districts near Rome; where he found a minute algoid vegetation, with characteristic spores, to abound. Lunia would destroy these; and this, he thought, might aid in explaining its medicinal action in ague.

~~March 1811.~~ □

~~Since my last lecture~~ I have been indebted to members of this class for two interesting items of information bearing on the causation of autumnal fevers.

I am ~~told~~ ~~One~~ that a writer in the Boston Medical & Spiritual Journal, quoted in Professor Stille's lectures, mentions that ladies and others engaged in skeletonizing leaves, by a process which involves the decay of their parenchymatous tissue, and exposure of the operator to these emanations when in that state, often have attacks of intermittent in consequence or at all events in coincidence therewith.

Dr. Wood states that solution of quinine, in his experiments, did not kill palmellæ; on the contrary, they flourished in it.

There are various points in the history of palmellæ which make it almost impossible that they constitute malaria; ~~they do not grow in the dark; they could not, therefore, be supposed to flourish in the body.~~ Frost lays a heavy hand on malaria; it does not kill palmellæ; on the contrary, they seem to flourish in an icicle. Prof. Leidy slept with various species of palmellæ, without disease ensuing. Dr. Wood has lived with palmellæ, and swallowed them by the thousand.

These are certainly very strong objections, as urged against the palmellæ with which Drs. Leidy and Wood experimented; but were these the plant to which Dr. Salisbury referred as the cause of ague? Dr. Wood candidly states that he does not know that they are; saying, with a just reflection on the exceedingly unsatisfactory description vouchsafed by Dr. Salisbury, "Prof. S.'s descriptions of his genera and species are so vague and destitute of character, that it is impossible to settle the question of identity, or to make any approach thereto."

crevices in the soil being sometimes several inches in depth, and an inch or more in width. In them, near the pond margins, the water stood within a few inches of the surface. Frogs, muscles, snails and insects were numerous. The soil was clothed with but little vegetation; it was bare of grass, but a very fine and short green moss was abundant. There was another species of moss which, for want of a better name, we called "stellate." It consisted of a number of small, thick, oblong leaves proceeding like radii from a common centre, and lying flatwise upon the ground, forming thus a disc from half an inch to an inch or more in diameter, with a plicated surface and crenated margin. The fine moss was assumed to be evidence that the soil was favorable for the growth of the plant, and the stellate patches were found to be still more intimately associated with it. The discovery of the stellate moss was quite sure to be followed by the finding of the ague plant.

The plants grew most plentifully on that belt of soil which lay between the very moist margins and the outer line of soil too dry for their growth. They were sometimes abundant on the margins of the fissures, and they were frequently found growing on the sides of the [illegible] inches below the plane of the

Objections by our Professor of Botany, Prof. Wood, — are as follows:

only extraneous bodies constantly found, minute oblong cells. These cells were recognized in the saliva, perspiration and urine of every patient examined. The next step in the investigation was the discovery of similar cells arising from the malarial soil. Upon glasses placed at night over its surface, which was in this case a partially desiccated and peaty prairie bog, Dr. Salisbury found in the morning these same bodies. Growing upon the ground over which his glasses had been placed, were plants which he regarded as of a palmelloid type. In a number of instances he was enabled to point out, in a striking manner, the association of these plants with localized attacks of ague; and in several cases, in which, for the purpose of experiment, sods of ague soil had been left in sleeping apartments, at a distance from malarious regions, he found that ague was developed in the previously healthy persons who were thus caused to be exposed to the emanations of the marsh earth. In every inhabited locality, where Dr. Salisbury found these plants growing, intermittent or remittent fevers, or both, prevailed, in proportion to the extent and profusion of the palmellæ.

In regard to the pathology of the disease, Dr. Salisbury says: "The lesions of intermittent fever are confined mostly to epithelial structures, showing, quite conclusively, that the exciting cause acts primarily upon the parent epithelial cells. . . . . These derangements consist in the altering and enlarging of glandular structures, and in inflammations and alterations in structure and function of the mucous, epidermic and serous surfaces. All other abnormal manifestations are either symptomatic of these, or are

THE

Chicago Medical Journal.

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Medicine, Surgery and the Collateral Sciences.

EDITED BY J. ADAMS ALLEN, M.D., LL.D.; AND WALTER HAY, M.D.

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Original Communications.

* As to practical suggestions, Dr Salisbury concludes upon a preventive of malaria supported by the above facts. Dr G. proposes artificial rains over the miasmatic earth, to destroy the paludal vegetation.

Most probably it might succeed & make the ground arable & still more fertile. But it would be an extensive undertaking in some localities! An affair of miles, perhaps.

Experience shows, however, changes of the degree of malarious ness in many places for from or unknown causes.

On our Schuylkill River from the "steamboats" & our city suburbs.

In St. Louis, one of the Mississippi islands, before the drainage of a certain region on the island 9 cases of fever or chills occurred in nearly all of the residents; after drainage — only 1 in 8.

The beginning of malarious problem in the Campagna near Rome has been assisted by the cutting down of the forest and shrubbery of laurel & myrtle, from Albano to the Tiber.

To this day, the Pontine marshes, not far from Rome have the reputation of being the most malarious of all places in Europe. On being asked by a traveller how the land of such a place, one of the

inhabitants to bend to have
replied, — "We do not live
we die." Late accounts, however, make this
to be exaggeration. I slept on an outside
seat of a vettura while crossing the Pontine marshes
on the 18th of Feb. 1859, just at sunset — that is for the following
reasons of the Rice Swamps of the
Carolinas & Georgia are
the most destructive malaria
of all spots in N. America.
One night's sentinel duty has
sometimes been fatal there to a
soldier.
Yet the great Dismal
Swamp of Virginia & N. C. —
30 miles long & 10 or 12 broad the other way, is not
malarious. It is covered now
all over with cypress trees.
Living vegetation, in vigor, is, as Pliny
observed, absolute of malaria.

* Also, as suggested by Dr Oldham's observations, being careful to wear warm clothing to avoid being chilled by the marsh atmosphere, evenings & mornings. And, according to common experience, avoiding also exposure in the middle of the day to the direct rays of a hot sun.

~~The other point was, that~~ Dr Oldham,
~~of the British Medical~~ advocates the theory
that intermittent is produced directly by sud-
den depression of the temperature of the body's
chilling, — under cold and dampness. He states
that he had a bed placed right at the edge
of a fever-breeding marsh, — and, sleeping there
under warm cover had no chills to follow.
Remarkable, & practically instructive. But, — so say
many of exposure to sun in malarial regions. Explanation.
Conditional causation is, I think, excluded as the causa sine qua
non — by localization, — latency, & action of frost, arresting.
Good precept demurrable, however, &c.

Oldham's theory is not to be accepted at all. The special habitats of malarial fevers are as well marked out as are those of plants by botanists. Temperature-changes of all kinds may occur in many localities without any ague or remittent

~~Choleraic~~ next

~~See my book on it.~~

(2)

Dr Oldham (~~British~~ of Indian) published a book, entitled "Malaria, what is it?"
(Lancet Examiner, March 11, 1871)

and works in some Himalayan locality 150° in daytime, 40° at night; a fall from 90° in shade to 70° at night is chilly, to 60° is almost misery.

Leeches of Indian forests, tribes, labour by day, & part of night catch birds & fish. However, they wear a large thick hooded coat from head to foot, & have a smouldering fire in the coat. (Race-acclimatization?)

In Central Africa no Negro thinks of spending night without fire. Livingstone attested the value of this precaution against malaria. Lind asserts same of peasants of Guinea Coast — fire in thatched hut. In Venezuela, Humboldt found every Indian with fire close to his hammock. Cooper (Indian hunter) lighted a fire to keep away the dead "anal" as they call it. Dawy tells that in Ceylon. Moorhouse states that when the Irish brownies before marched in Italy, Napoleon ordered the Italians to light fires

To Escape Fall Fevers, in a Malarious Locality.

(32) Thursday

1. Avoid being out in the evening and night air.
2. Never go over tainted ground with an empty stomach, or without sufficiently warm clothing.
3. Always have a fire in the house in damp weather.
4. When much exposed, take a few grains of quinine daily.

Yellow Fever.

1. Is met with only in warm weather, and near the sea, or rivers.
2. Is rarely diffused continuously over a very wide region.
3. Is not contagious; i.e. conveyed by a poison produced in the bodies of the sick.
4. Is rarely, if ever, conveyed by fomites. (fomites)
5. May be carried in foul ships.
6. May be prevented by Sanitary Police. Removal of all inhabitants should be enforced when the disease has broken out.

[illegible]

[illegible]

[illegible]

[illegible]

For Prevention, some measures are certain and reliable. Draining in malarious districts, continued culture.

Residents may often escape the Disease by ~~[illegible]~~ precautions. By

1. Keeping indoors from before dusk to one or two hours after sunrise. "Night air" is the worst in malarious regions. Also, avoid hot sun. 2. Never go out without warm clothing or over a low malarious ground with an empty stomach. It is not necessary to put whisky into it — breakfast or supper will do. Drink vs. whisky. 3. Lighting a fire in the house every damp day or two, no matter what the season or the month.

4. Dr Hamed says, Mosquitoes in the marshes at night. Netting keeps out malaria. ? —

Chemistry.

End of 29th Lecture, 1872.

Quinine as Prophylactic

— or, Cinchonine sulphate,

or bark!

Symptoms: — not known

30 or 40 grs daily

KEY took more afterwards

2 or 3 gr doses

his housemaids stole his medicine chest a few weeks before his fatal illness.

Dubailler — sufficient!

6 gr. daily

Our army somewhat

^ fever

compl with R

not less than 4 grs

By my simplicity — I have been exposed with impunity, taking 6 grs daily.

Go back to printed pages, 27 & 28, on etiology of Yellow Fever.

Yellow Fever **never** visits:

San Francisco
~~St. Louis~~
Chicago
Cincinnati
Pittsburg
~~London~~
Paris
Geneva
Berlin
Vienna
~~St. Petersburg~~
Athens
Alexandria
Calcutta
Canton

Y. F. visits **occasionally**:

Rio de Janeiro
Natchez
Vicksburg
Memphis
Norfolk
Richmond
Baltimore
Philadelphia
New York
Boston
Gibraltar
Marseilles
Barcelona
Cadiz
Malaga
Seville
~~Leghorn~~
Sicily

Y. F. **often** visits:

West Coast of Africa
Tropical Islands of Atlantic
North Coast of S. America
Cuba
Vera Cruz
New Orleans
Mobile
Savannah
Charleston

Natchez;	Marseilles;
Vicksburg;	Barcelona;
Memphis;	Cadiz;
Norfolk;	Malaga;
Richmond;	Seville;
Baltimore;	Xeres;
Philadelphia;	Carthagena;
New York;	Leghorn;
Boston;	Sicily, etc.

All of these places are either on the Atlantic, or the Gulf of Mexico, or the western part of the Mediterranean Sea, or on great rivers emptying into one or other part of those waters; all being portions of that great oceanic current which sweeps from the western shore of Africa, freighted with tropical life and death, against the midlands of our western continent; to return, as the Gulf Stream, back upon the European, and finally upon the African Coast.

4. The germs of the yellow fever poison can live and multiply only during *continuous* **warm weather** (average of 80° Fahr. for a month), with a **high dew point**; *i.e.* an excess of moisture in the atmosphere.

5. They require, also, for their development, abundant products of **vegetative** and animal **decay,** especially the former. As we have seen, yellow fever is a disease, not of the country, nor of inland towns, but of **sea-ports,** or cities on great rivers near the sea.

6. The infection* of yellow fever is rarely diffused over regions of great extent; mostly its limits may be measured by **fractions** of a **square mile.**

* By *infection* I mean atmospheric propagation or transmission.

7. It is *never produced or multiplied in the bodies of the sick; i.e.* is **never,** correctly speaking, **contagious.**

8. It is very **seldom, if ever,** transported by *fomites; i.e.* clothing, bedding, merchandise, etc. If it exist in any such material, it is certainly **destructible,** or removable by simple cleansing and disinfecting measures.

9. **Ships** sometimes transport it *by carrying in their foul and pent-up holds* **materials** *and an atmosphere which afford the necessary* **conditions** for its growth and persistence.

10. But when thus carried, no *extension* or further local propagation of the morbid cause occurs, **unless** *heat, moisture, and emanations of decay abound at the place* to which it is brought.

11. Thorough **cleansing** *and* **fumigation** *of ships,* like that of persons and fomites, will certainly always deprive them of the power to transport or generate yellow fever.

12. The **removal** *of the population* of any infected district will inevitably **arrest** and put an end to any yellow fever endemic.

The mode of causation of **typhus fever** appears to be placed beyond a doubt. It is not confined to any part of the world, although cold climates are especially subject to it; nor to any season, although it occurs most frequently in the winter.

Jail fever, camp fever, ship fever, etc., as *synonyms* for typhus, indicative of its origin in certain instances, all suggest its dependence, *in the first place,* upon one essential cause—**ochlesis** or *crowd-poison* (from ὀχλος, a crowd).

Wherever the *excreta of human beings,* from their lungs

Yellow Fever.

Against contagiousness of Yellow Fever — we find.

Chervin (early) & a Commission of the French Academy app. &c —

A. Humboldt — in Mexico; very decided — excellent authority. ←

London Gen. Board of Health 1852

Superior Council of Health of Paris (waves some years later) 1845

Sanitary Comm. of N. O. concluded

U.S. Quarantine & San. Convention at N. Y., 1859.

at last vice ~~Dr Drake~~ Dr La Roche

Dr. Gavin Milroy

Dr. J. C. Nott, formerly of Mobile

Dr Barton of N. O.

"shears" — meteorol. theorist

& Dr. G. B. Wood —

Prof. Stille I understand to be opposed to the view of actual personal contagion of yellow fever, though not regarding it as occasion, compensation by fomites.

Over

Nor positive Contagion

Morette - French -

Alison of Edinb.

Dr. McMillan - English sanitarian

The late Prof. S. H. Dickson, of Jeff. Coll.

The Surgeon General's Department, (1872) — Prof. Pathology

Dr Harvey Brown's able Report does not

view of the able & learned

Prof. Stille, hopeless, priests affirming personal contagion of

who teaches or cathedra here upon

Yellow fever.

Practice; but his views must be

known to need all of you.

I shall respect U if I happen

even to differ from him upon any

ground.

But independent investigations

the best way always to promote the

advancement of truth; the only

way, indeed, for an earnest mind to adopt.

→ (Back to printed slips now.)

1879 Lancet

Dr. Pavee's recent retraction of

personal contagion, 1875

Dr. Pavee's are relin-

quished when Mr. Hopkins

Sydney newspaper slip

DEATH AT THE LAZARETTO.—The sickness from yellow fever is, as far as could be ascertained from the Board of Health, confined to the Lazaretto Hospital, on the Delaware. Dr. Thompson, the Quarantine physician, who has been sick with yellow fever, died at the hospital yesterday morning, and the life of Mrs. Fanny Gartrell, the nurse in the same institution, also sick with yellow fever, was despaired of. The Quarantine Master, Robert Gartride, is also very ill.

eaten into the vitals of the fish. Under the microscope the worm was ascertained to possess the power of adhering so tenaciously to the fish, beneath the gills, that it could not be shaken off. When this worm takes hold of an exposed surface the fish dashes itself against a rock and sometimes manages to tear off the parasite, but inflicts on itself wounds which have been mistaken

NOT IN PHILADELPHIA.

To those in some of our sister cities who appear to be much concerned about the yellow fever in Philadelphia, it may be a satisfaction to learn that there is no yellow fever in Philadelphia. There have been cases of that disease, we regret to say, at and near the Quarantine station, on the Delaware river, some ten miles or so below the city, and a number of excellent people have fallen victims to it. But the Quarantine Station is not in Philadelphia any more than Sandy Hook is in New York, or Annapolis in Baltimore. It is the site of the Lazaretto Hospital, to which yellow fever patients received from vessels from infected ports are taken every summer, just as they are taken to the New York Quarantine. There is no more danger of the disease spreading from that Hospital to Philadelphia now than in past years, and no one has ever thought of getting up a panic about it before. So much for our interested friends away from home.

Now, as to the presence of the disease in the vicinity of the Lazaretto. A number of worthy people have been seized with and have died of a malignant fever there, and among them the Physician of the Hospital, the wife of the Steward, one of the nurses, and several residents close to the station. Some of these fatal cases have been pronounced by competent authority to be yellow fever, and they have been traced indirectly to the filthy condition of the bark Home, which arrived at the Quarantine station about the end of June. Their fatal character is also attributed to some extent to the malaria from the wet lands overflowed by the freshet of last October. The Board of Health does not seem to have taken sufficient care in the case of this vessel and her cargo, and a similar absence of precaution appears to have characterized its proceedings with reference to the disease itself at the Lazaretto station. Whilst there are a number of excellent men in that Board, there is clearly something faulty in its organization. It required very strong remonstrances to procure attention to the relapsing fever, and still stronger to compel the officers and inspectors of the Board to give honest attention to the condition of the streets of the city. One citizen was rudely rebuked by the President of the Board when he offered a suggestion about the relapsing fever; and now we hear, on the authority of a respectable physician of Chester, that he was repelled by the President of the Board when he made a suggestion concerning the present condition of affairs at the Lazaretto. This is not by any means the right spirit for the discharge of a serious public duty, but it accounts for many shortcomings in the operations of the Board not otherwise to be understood.

1870. Aug. 16th & Thompson & Sarah Mitchell died
(Cases in all 35 cases there; 2 more deaths — left town
a month later, 17 cases in town, but 2 deaths.) & 7 others — the city is free from cases, though
the Chester Physician of one of them assured us just a day or two ago that it was still in quarantine at the Lazaretto

Brest, was welcomed by a deputation of clergymen, among whom were Bishop Tublice, of Covington, and several Roman Catholic Priests of Cincinnati. The Archbishop is in excellent health.

St. Patrick's Mutual Alliance Association held a picnic at Finch's Union Park to-day, at which a bust of Daniel O'Connell was unveiled, and Mayor Hall delivered an oration, reviewing the career of the patriot.

The whole number of deaths in this city, from July 3d to August 7th, foots up 5041; corresponding period last year, 3826, or an average increase, this season, of about 200 per week. These figures tell in brief the story of the unprecedented heat through which we have been passing.

Wall street to-day, is without any new excitement. A feeling of precaution is predominant on all sides. The Germans alone are bold and confident.

The Assistant Treasurer this morning received proposals for the sale of $1,000,000 gold. The total bids amounted to $2,415,000, at from 116.10 to 117.30. The awards were to Messrs. Trevor & Colgate, Drexel, Winthrop & Co., Gibson, Beadleston & Co., and several other firms.

Gold is weaker, on the improved feeling in London. A report that Prince Frederick Charles had cut through the French lines between Nancy and Metz, also helped the bear feeling. At 10 A. M. the quotation stood at 118; 11 A. M., 117⅝; 12 M., 117½; 1 P. M., 117⅜; 2 P. M., 117½; 3 P. M., 116⅞; 4 P. M., 116¼; 5 P. M., 116¼ a ½. The rates paid for carrying were 2 and 1 per cent. to flat. (The marked decline at the close was the effect of a report of a "revolution" in Paris.)

Foreign exchange is a shade firmer, the Prussian victories encouraging remittances to Germany. Bankers have advanced their rates about ⅛ per cent. since yesterday. On Frankfort the closing quotations are 43 a 43⅛; Berlin, 75 a 76. The Minnesota to-day took out $50,000 in specie, and the Russia $973,000.

Government bonds are firm, in sympathy with the improvement in London. The operations, however, are on a very moderate scale. The German houses, for the moment, are about the only buyers.

Registered, 1881, 114½ a 114¾; Coupons, 114⅝ a 114¾; 5-20s Registered, 1862, 111 a 111¼; 5-20 Coupon, 1862, 111⅞ a 112; 5-20 Coupons, 1864, 111⅛ a 111¼; 5-20 Coupons, 1865, 111⅛ a 111¼; do. 1865, January and July, 109¾ a 110; do. 1867, 109⅞ a 110; do. 1868, 110 a 110¼; 10-40 Registered, 104¼ a 104¾; 10-40 Coupon, 107¾ a 107⅞; Pacific, 111¾ a 112.

In State bonds the business was limited but well distributed. At the last call the market was strong.

The railway list was buoyant during the morning on reports of an agreement by the Railroad Convention at Saratoga to uniform rates for freights on the basis in force before the recent falling out. Prices were ½ a 1½ per cent. better. At the first board 200 Reading sold at 96¾, 500 at 96⅝, 200 (between call) at 96½, and 16 at 97. At the second board 400 at 96½. The market remained firm and buoyant to the close.

New York Central and Hudson. Consolidated Stock, 96⅛ a 96½; New York Central and Hud. Cer., 91⅝ a 91¾; Harlem, 134¾ a 135; Erie, 24 a 24¼; Reading, 96⅜ a 96½; Lake Shore, 94¼ a 94⅜; Wabash, 52 a 52⅛; Pittsburg, 107⅞ a 108¼; Northwestern, 82½ a 82¾; North Western preferred, 86¼ a 86⅜; Rock Island, 114¼ a 114⅜; Fort Wayne, 93½ a 94½; Milwaukee and St. Paul, 61½ a 61⅝; do. do. preferred, 77½ a 77⅝; Ohio and Mississippi, 34

Elements Of Causation Of Typhoid Fever.

1. Individual and family predisposition.
2. All agencies which lower vital energy; including mental depression.
3. Foul atmosphere; especially tainted by sewage.
4. Bad drinking water; with or without special fecal (typhoid) contamination.
5. "Epidemic influence" of unknown character.

Cholera Infantum:

1. Intense summer heat; over 95° Fahr. in the shade.
2. Impure atmosphere of large cities.
3. Infantile susceptibility (cerebro-spinal & excito-secretory).
4. Starch food, stale milk and other improper diet.

Por Boano

Drs Parkes & Aitken: On Typhus — Printed page before this

Both these eminent writers have given great attention to one striking case of the seeming first origination of Typhus; on an Egyptian vessel the "Scheah Echald" — bringing 476 Arabs to Liverpool to man a Ship of War for the Pasha.

The air of the ship was bad — & typhus broke out on board during the voyage. No proof whatever exists that they got the typhus at Alexandria.

The general absence of typhus from all such climates makes it the height of improbability in the absence of evidence, that they did.

But Drs Parkes will insist that they might — so there is the idea of necessary specific contagion.

That climate has an effect on the predisposition to typhus may be illustrated by the fact that during the sieges of Paris and Metz, in the Franco Prussian war (1871-2?) no typhus occurred; although the misery of the population was great and prolonged.

Define contagion & infection.

Small-pox is contagious.

Yellow fever is infectious,

Typhus is both.

and skins, as well as bowels and kidneys, *accumulate* in an unrenewed atmosphere, for a considerable period, *typhus will be produced.*

Then it becomes infectious; in fact, contagious. Not only do certain places become tainted with it, so that all persons abiding there are liable to it, but *a single patient* with typhus, taken to a new neighborhood, may generate the disease in other persons. The excretory zymotic agent, which ordinarily requires *numerous* bodies to afford it in typhus-breeding quantity, is so *concentrated* and *dynamized* in the body of the patient sick with the fever, as to have in it the poisoning power of a whole crowd. Thus, in the case of typhus, infection and contagion are mutually convertible; the morbid poison being originated by the alteration and accumulation of matters *naturally produced in the body.* It is not so with the contagion of small-pox, the origin of which is not thus controllable by circumstances, in the absence of its *specific cause;* nor is it so with the *localized* infection of yellow fever, or the *migratory* poison-cause of cholera. Late English opinions. (See my notes.)

Typhoid fever presents, as to its etiology, ~~much~~ at present, greater obscurity. ~~It cannot be said that *anything* is *known* in regard to the nature of its causation;~~ It is a subject quite open to, and important for, investigation.

The following are the most striking facts bearing upon it:

1. Typhoid fever is **rare** in persons **over forty** years of age, or under ten.

2. It **scarcely ever** (apart from *relapses*) occurs **twice** *in the same person.* The first instance I ever knew of a distinct second attack occurred near the beginning of 1874 (R. A. Cope, Germantown; Drs. J. E. R. & Jas. D.; about 15 yrs interval)

3. Agencies causing **depression** *of the nervous system,* such as anxiety, fatigue, home-sickness, etc., promote the occurrence of typhoid fever.

4. Typhoid fever is not unfrequently **epidemic** or endemic; especially in places when the air or water is bad.

Examples are reported in which typhoid fever has *appeared* to be extended by contagion. Without being able to deny or disprove the possibility of such an occurrence, it appears to me ~~more probable~~ not impossible that, in the instances alluded to, *typhus* fever has been confounded with typhoid, or a *blending of the two diseases* has taken place.

The subject of the *blending and conversion of the types of fever* (Dickson) appears to me to belong most appropriately to the department of nosography and pathology.

See paper notes

Cholera is an occasional *epidemic* in all parts of the world except Hindostan, where it is *endemic.*

Unlike yellow fever, in which *one attack generally* gives *exemption* for a lifetime, the same person may, if exposed, have any number of attacks of cholera.

Unlike intermittent and remittent fevers, to the local conditions productive of which some races of men (as the negroes) become *acclimatized,* so as not to be susceptible of miasmatic influence,—in the case of cholera, *natives* are, where it prevails endemically, *as liable to* be attacked as foreigners.

Attention to all the facts connected with the origination and migration of cholera has convinced me* that its pecu-

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* See a paper "On Animal Decomposition as the Chief Promotive Cause of Cholera," *Philadelphia Medical Examiner*, August, 1855.

Stated by Prof. author in England, 1874 Phlegmonic
most typhoid in towns; some not Phlegmonic.

Typhoid

Dr Murchison

as

Supposed immediate cause

Typhoid fever

"Must study Typhoid"
Patient Pass in. 2 yr Parkes.

Walz, Prussia, 1822

Müller, Mayence, junior, 1843

Richter, a school at Vienna,
sewer leaking into a well — 1848.

Dr A. Flint, N. Boston 1843

Feb. 1852 — A stranger with typhoid
lodging at an inn, 28 out of 43 people
(all of the village) got the fever. 3
of the 20 families had none; 2 were
distant. Based other water — 1 has
quarrelled with the innkeeper (used their
own well: all the rest drank the
inn-well water,

Dr S. Jackson of Northumberland

Dr N. Smith of Conn.

Mr Carpenter of Croydon — Dr Routh, Dr Schmidt & Emmerich

Dr W. Budd.

Dr Jenner Bullock

Dr Watson yields to the transmission view —
(& Christison of Ed. is not finally determined) —

But — Dr Parkes admits, &
has known, cases where
drainage was very bad in
place for years, — with
no typhoid fever

Dr W. T. Gairdner, of Edinburgh: ~~discussion~~ of the two:
Then, consider how it is
in this country

Rotch
Mixed cases
typhus typhoid

See next note paper

(R.B. Wood)
A

Arctic exp — Mountain of Moth
— "mountain fever" of Rocky mts
(Hammond)

Overpopulation.

Dr Flint admits
it mostly independent
of water

Still — foul air & water may aid —
Disinfect provisionally for security.

Typhoid by milk (1)

ventilator to the sewer is the waste pipe which opens directly over the surface of the water in the cistern; but yet such is the case so universally, that when we cannot find out how the poison has been introduced, we should acknowledge our inability to do so, and not cut the knot by saying that it has originated on the spot, a conclusion for which, in the present state of our knowledge, we have no real proof whatever. The number of instances in which epidemics have been traced to single imported cases is now so great that, although it does not actually prove that such is always the case, still it should make us hesitate before declaring that the disease has broken out without direct importation in any given place.

London 1873?

The facts relating to the epidemic which still engages general attention in England, are, in order of sequence, and independently of any theory at all, as follows:—

The disease was noticed to be prevalent, in the middle and latter part of July, in certain houses in the parish of Marylebone, and notably in houses inhabited by medical men, houses where every possible precaution was believed to have been taken: it was observed by Dr. Murchison that an undue proportion of the persons attacked obtained their milk from a particular dairy, and on further investigation the conviction grew upon him that this milk was, somehow or other, contaminated with typhoid poison, and was spreading the disease. A difficulty arose, inasmuch as the locality in which the fever cases were was only a small part of the district supplied with milk from the suspected dairy; but Mr. Radcliffe, on examining the mode of distribution of the milk, showed that on the hypothesis that the milk from one of the several farms was contaminated before coming to the dairy, a localised outbreak or several localised outbreaks of fever must have been the result; so that any suspicion which may have existed as to the cause being possibly to be found in the precincts of the dairy in London, vanished at once.

On the other hand it was found that the owner of one of the dairy-farms had died on June 8; that he had been out of sorts since early in May, and sufficiently so for his two medical men to consult with a third on the subject; that the medical men all suspected that he had enteric fever; that this suspicion became stronger when the patient passed a large quantity of blood and putrid matter on June 1, which blood, &c., was ordered to be buried away from the house, as being most probably infectious; that the patient became considerably better towards the end of the first week of June, but that he died suddenly on June 8 while getting out of bed, no medical man being present; and finally that the medical attendant not being sure of the diagnosis of enteric fever, and considering that, anyhow, the man had got over it, certified that he died from heart disease, as he had for years been suffering from the effects of a "fatty heart;" nevertheless he took the precaution to have the body buried as speedily as possible, thinking that it might be infectious.

Taking all the facts together, these two series of events present at any rate a most remarkable coincidence; and when we find that enteric fever is and has for some months been prevalent in the villages near the farm and in daily communication with it, and that a son of the farmer has since had the disease, the conclusion is irresistible that the farmer died of enteric fever, and that he

Typhoid by milk

(1)

had it at a time most singularly adapted to account for the outbreak in London.

The description of the farm-yard itself has been given elsewhere; suffice it to say that the well really drained the premises, and there is little doubt but that the poison got into the water, which was so bad that it had long been condemned as unfit to drink.

Hitherto epidemics of typhoid spread by means of milk have been attributed to the admixture of water as an adulteration with it; in this case no such suspicion arises, the milk was exceptionally rich, and was daily tested with sufficient accuracy to show adulteration with any but a small amount of water; but the water from the well was conveyed to the dairy pump by a pipe, and was used for washing the dairy utensils, so that it is easy to account for the presence of a small amount in some of the "churns," an amount, however, enough in so favourable a pabulum as milk to infect a very large quantity of it.

The lesson to be drawn is that all dairy-farms must be subject to regular sanitary supervision, especially as to their water supply, that such details of arrangement with regard to the cleansing of the vessels as may seem to offer least chance of the possibility of mischief should be adopted, and that the presence of infectious disease among the *employés* should be noted at once, and the proper precautions, which are now well known, taken.

W. H. CORFIELD

DOLMEN-MOUNDS v. FREE-STANDING AND TRIPOD CROMLECHS

MR. W. COPELAND BORLASE, the talented author of "Nænia Cornubiæ," in his communication to NATURE (vol. viii. p. 202), calls attention to the structure of Lanyon Quoit as an undeniable example of a British tripod cromlech or free-standing dolmen, by way of "protest against the *dictum* of Mr. Lukis being extended to our British examples, before a careful scrutiny has been made of every monument of the kind, from one corner of our isles to the other."

To my friend Mr. Borlase I owe my personal acquaintance with the numerous non-historic rude stone monuments in the Land's End district; and, as he is a life-long resident in the immediate vicinity of these interesting relics, to which I am a mere casual visitor, it is with feelings of great delicacy and diffidence that I now venture to place in a somewhat different aspect the statements and conclusions which he would wish your readers to adopt.

It were strange if Mr. Borlase did not turn out the best authority on early Cornish remains, for within six or seven miles of his residence at Castle Horneck (itself the site of an ancient Cornu-British encampment) there are at least twice as many dolmens as in all the rest of England; and though there may be perhaps as many in Anglesea, and twice as many in Wales, still West Cornwall has an advantage over both these districts, viz., that in Wales and Anglesea, the country of the Silures, there are no circles but only dolmens; in Cornwall, as in the Isle of Man, there are both circles and dolmens, the result, as Fergusson tells us, of an Ibero-Aquitanian admixture with Celtic and other (Scandinavian?) blood in the inhabitants. (*Vide* "Rude Stone Monuments," p. 163.)

Inheriting the tastes and following in the footsteps of his great-grandfather of antiquarian renown, Mr. Borlase has made great use of his opportunities, and is continually adding to, or accumulating store of facts with regard to the ancient history of our country. On the other hand, most antiquarians will probably agree with me in

to embolden practitioners inclined to employ the aspirator, whether as a means of diagnosis or as a therapeutical agent in certain diseases of the abdomen; and I believe that the fear of traversing a certain extent of the proper tissue of the liver with the trocar, and of puncturing the organ, whether sound, congested, or hyperæmic, should not in future serve as a ground for declining to operate."—*Med. Times and Gaz.* Jan. 9, 1875.

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Foreign Bodies in the Digestive Canal.—The incident of the *homme à la fourchette*, the man who swallowed a fork in Paris in April last, has inspired Dr. Mignon with the idea of collecting all records of similar cases. He has been able to find details of one hundred and sixty-three, and it would be difficult to imagine anything more astonishing than the catalogue (given in the *Union Médicale* for Nov. 3) of the objects swallowed by either veritable lunatics, or what may be termed sane idiots. Amongst the very indigestible and uncomfortable items catalogued we find fifteen gold medals, hair rings innumerable, 175 francs, a shoe buckle, nine inches of a sword blade, very sharp scissors, eighty pins, a baby's bottle, the castor of a night-stool, an entire set of dominoes (the size of which however is not stated), one hundred *louis d'or*, a flute four inches long, a glass phial, thirty-five knives, a clay pipe, from fourteen to fifteen hundred pins, a bar of lead weighing a pound, a whetstone, and (in three instances) a table fork. But the most extraordinary of all these cases occurred in the instance of a convict who died at Brest, in 1773, and on whose body a necropsy was performed. The stomach was completely displaced and occupied the left hypochondrium, the lumbar and iliac regions of the one side extending into the pelvis nearly as far as the foramen ovale; it contained fifty-two different objects, weighing altogether one pound ten ounces. Amongst them was a part of the hoop of a barrel, nineteen inches long and one wide. M. Mignon has classified these 163 cases into three categories. 1. Foreign bodies which passed through the whole extent of the digestive canal with scarcely any injurious results. 2. Foreign bodies which have passed through the whole extent of the digestive track, with more or less serious results, but ultimate recovery. 3. Foreign bodies, which have passed through the whole digestive track, causing serious disturbance and fatal results. 4. Cases in which the foreign body has not been passed. 5. Cases in which operations have been performed. It is a remarkable fact that the cases of death caused by the presence of foreign bodies in the digestive tubes are less numerous than might be expected. Out of the 163 cases, we only find ten deaths from this cause. To these must be added two deaths after operation, making altogether twelve, or 7.3 per cent. There appears, therefore, to be no great cause for the surgeon to be over-anxious in these cases, but to remember, that, unless there should either be some complications in the general health or some special indication, it will be as well for him not to interfere, and above all things not to perform gastrotomy, save as a last resource. Of this last operation M. Mignon relates five cases; amongst them being those which Mr. Neal, in 1855, and Mr. Bell, in 1859, thought themselves obliged to perform, the one in order to extract a bar of lead ten inches long, and weighing a pound, the other to do the same with a bar of lead, nearly twelve inches long, and weighing more than nine ounces. In both these cases the symptoms were very serious, comprising violent pains in the stomach, twitchings along the vertebral column, sickness, and general prostration. The foreign bodies could not be felt through the abdominal walls, but the surgeons decided on performing the operation, thinking that the sufferers had no chance of relief by expulsion *per anum*. The success of the operations was fortunately complete.—*Lond. Med. Rec.* Dec. 2, 1874

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A Simple Means of tying in a Catheter when the Ordinary Eyelets are wanting.—This is effected by fitting on a small piece of India rubber tubing to the proximal end of the catheter. A double thread is then passed through the India rubber at one side so as to lie between the inside of the tube and the outside of the catheter.

The thread thus passed is next tied firmly round the tubing, and by this means it is firmly secured to the catheter. The two free threads forming each end are then knotted, and to the loops thus formed the ordinary tapes are fastened. A plug can then be inserted, and, owing to the elasticity of the tube, will always accurately fit and prevent any escape of urine. Mr. ANNANDALE further remarked, that as far as he was aware, this simple method had not yet been described, but that on this point he would be glad of any information. Dr. Watson observed that he had already used this method.—*Edin. Med. Journ.*, Jan. 1875.

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The Epidemic of Typhoid Fever at Over Darwen.—It is announced that the official report on the outbreak of fever at Over Darwen will shortly be made public. So long ago as October last, Dr. STEVENS was despatched by the Local Government Board to institute inquiries into the cause of the epidemic, and it is the result of his investigations which will in a little time be published. Meanwhile, there appears every reason to suppose that the outbreak, as usual, was the result of pollution of drinking-water. Rumour has it that the first case of typhoid fever imported into Over Darwen occurred in a house at some considerable distance from the town; the sufferer contracted the disease, came home, and died from it. The distance of this house from the town, and the circumstance that its sanitary arrangements were held to be good, also that there was apparently no communication from the house with the water drunk by the sufferers in the subsequent epidemic, diverted attention from this important case, which nevertheless, it is said, will be found to have been the cause of all the illness which followed. On first inquiry, it was stated that the town derived its water supply from a distant and unpolluted source, and that the water was brought by covered channels into the town, and could by no means be polluted by the excreta from this first case. A minute investigation which was presently instituted revealed a startling contradiction of this statement. The drain of the closet into which the excreta of the first patient passed, emptied itself into a neighbouring field for agricultural purposes; through this field also passed the water-main conveying the water supply of the bulk of the inhabitants of Over Darwen. At the point of supposed contact of the pipe with the drains, special precautions had been taken to prevent any infiltration of sewage into the water; but when the earth was dug up to ascertain, how far these precautions were efficient, it was found that just above the spot where the cement had been placed there was a leak, which allowed the contents of the drain to be freely sucked into the water-pipe; and thus, as the typhoid poison was thrown down the drain, it passed into the water-main, and was constantly mixed with the drinking-water on its way to the town.

The epidemic in Over Darwen, which has caused such universal attention to be directed to it, attacked no less than 2035 persons within a very short period, and occasioned the return of 104 deaths as its result.—*Med. Times and Gaz.*, Jan. 16, 1875.

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Scarlet Fever during Pregnancy.—Dr. M. WILLIAMS relates (*Brit. Med. Journ.*, Jan. 9, 1875) the case of a female in the eighth month of her pregnancy who passed safely through a sharp attack of scarlet fever. The skin of her child when born was desquamating, showing that it had had the disease in utero.

—

Strange Obstetric Practice.—M. BLONDEAU brought before the Therapeutic Society of Paris, in November last, the case of a lady who, in previous confinements, had suffered from considerable hemorrhage. When six months advanced in pregnancy she had violent epistaxis, which nothing would stop, and, as she was dying from loss of blood, transfusion of human blood was had recourse to with Colin's apparatus, and succeeded. The pulsations of the child, which had vanished, were heard again, and the fœtus was extruded. (It is not said whether it lived.) No attempts were made to remove the placenta, *for fear of hemorrhage*, and it was left

An influential meeting was held at Edinburgh on the 21st instant, the Duke of Buccleuch in the chair, to consider a report read by Mr. MacIntosh on the pollution of the Scotch rivers. Sir Robert Christison, in moving the adoption of the report, said that his connection with movements of a similar kind dated from 1830; he thought that with regard to the three great necessaries of life, food, drink, and air, no one ought to be entitled to pollute any of these articles; nay, more, he came to the conclusion that this was a case in which prescription ought not to apply. It was evident, moreover, from the recent action of government in sending out commissions, that, sooner or later,

out increase of price.

—

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an end would be put to the systematic pollution of our rivers. The report was unanimously adopted. We are glad to find that action is being taken throughout the country to remove this great evil. We are convinced that much of the waste products of manufactures at present poured into our rivers might be utilized and made a source of profit, whilst the evils of pouring our sewage into streams, too often the only source of water supply, are daily becoming more obvious, as Mr. Cross admitted the other day, in the increase of "excremental disease" throughout the country.—*Lancet*, Jan. 30, 1875.

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TAYLOR'S MANUAL OF MEDICAL JURI

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BY THE SAME AUT

THE PRINCIPLES AND PRACT
DENCE. Second Edition, Revised, with
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In Ireland facts do not bear out this hypothesis, for, as already stated, when an epidemic of fever has become established it breaks out simultaneously in situations the most different, and in some where no such emanations can be supposed to exist; thus I have seen a whole family affected in the telegraph situated at the summit of Killiney, a mountain formed of hard granite; and, indeed, the granite districts beyond Rathfarnham, Tallaght, and Killikee supply the Meath Hospital with its worst cases of typhus." Further on he observes, "Although ready to allow the general improvement of the health of the public from improved drainage, improved habits of cleanliness, and increased comforts, yet I cannot admit that in Ireland we are to expect any notable diminution of fever from the operation of these causes. In making this statement you are aware that I am opposing the usually prevalent opinion.

Prof. Stokes of Dublin
Lecture on Fever

(3)

Quoting Graves of Dublin.

rendering them less [illegible] to resist the [illegible] the general mortality. The influence of bad ventilation and overcrowding I need not here dwell on; nor, on the other hand, need I occupy your time with more arguments to establish the truth of the doctrine of contagion. You will find in the writings of Sir Robert Christison, of Dr. Murchison, and of Dr. Graves convincing evidences on these points; and let me again refer to the great argument drawn from the liability to contract fever observed among the medical practitioners of Ireland, especially in the epidemic of 1847.

The occurrence of offensive odours proceeding from the putrescence of organic matter naturally led to the widespread idea that the objectionable smell was the exciting cause of sickness, and that all sanitarians had to do was to remove the sources of air and water pollution. But though the researches of Murchison and of Sir William

when an eruption is well out, to say to which of the exanthemata the individual case belongs. Under such circumstances the public used to regard it as a mark of ignorance if the attendant were unable to give an exact name to the malady, but they are more enlightened now.

APPENDIX A.

The following are some extracts of a letter from a gentleman of great ability and truthfulness, who holds an important public appointment in the South of Ireland. He had been requested by the commissioners of a town in that part of the country to inspect the state of the town and report on the works necessary for sewage improvement.

It was about the year 1865, when there was some apprehension of an epidemic of cholera :—

"I went," says this gentleman, "through every lane and street, and examined all the tenements of every class in the latter end of January or beginning of February. There were no main sewers in any but the principal streets, and none of these had them for their whole length. The lanes and alleys leading off from these streets were mostly very narrow, and had no outfalls for sewerage discharge except surface channels, and very few of the houses had any back entrance; a good many had neither yards nor back entrances. But all had dung-pits. If not behind, they were contrived in the widest parts of the lanes by being sunk and inclosed with walls, so as to hold from 8 to 12 cubic yards of manure each. Where the tenement had not the 'easement' of a dung-pit or yard, or right to part of the common way, the manure was stored *in* the dwelling house. Most of the houses were thatched cabins, but several rows of two-storied houses were built, and a good many one-storied slated houses of small size were to be found containing four apartments. I discovered in one of these rows, which had very small backyards (not half the size of the house in any case), that the whole of the ground-floor, and part of the house, except the staircase and passage leading to it, were filled with manure (the scrapings of the roads and streets) tightly packed to the height of eight feet; and in the rooms above there were two families living—one in each room. The manure had of course heated, and was steaming up through the chinks of a badly-laid floor, the under side of which was dripping wet from the the fermentation below.

"In several of the rows having backyards the surface water was allowed to run through the whole length of the lane from yard to yard, and the occupier of the lowest tenement was looked upon as having the most valuable holding of the whole lot, and something like the Chinese care of liquid manure was shown by extra mould or refuse being provided to absorb or soak it up. The parts of the town to which this description may apply covered about 25 acres, and almost every part of that surface was teeming with effluvia from such decayed substances of every sort as are admitted to be of the most noxious kind, without any provision whatever for carrying off the putrid water which is always to be seen in so wet a climate as this.

"The population is about 6000, of which two-thirds live in cabins fur-

nished with the inevitable dung-pit. These cabins contain 700 families at the least. The dung-pit averages 10 cubic yards in content, so that on 25 acres we have at least 7000 cubic yards of fetid matter, with 4000 people breathing the exhalation of such an accumulation as could not, I think, be found elsewhere in Ireland.

"But nevertheless this town has always been *a remarkably healthy place.* There is a fever hospital which has not been full since the famine dysentery in 1847–8, and which is very frequently empty. There is no dislike on the part of the poor to go into this hospital, because it is not the workhouse, so that the few fever cases that do occur are quickly removed out of the crowded houses.

"It was asked—'How can such a state of things be? or how can it be accounted for that such good public health can exist amidst all this rottenness giving rise to the miasmata so well known as certain producers of fever and cholera?' I suggested that there were two great advantages in favour of health, namely: an ample supply of the very best water and *smoky houses.* The subsoil of the town is gravel and sand to a great depth, and in this there are many strong springs, the purest water being met with at 6 or 8 feet under the surface. The fuel used is all turf, and the blackened walls of the inside of the houses showed that the inhabitants lived in an atmosphere of peat smoke. I cannot help thinking that such smoke, possessing as we know preserving or antiseptic properties, must act as a deodorizer and preventive against infection or malaria.

"I asked one of the occupiers who lived over his dung-heap in an upper floor how he could expect to escape death by fever or cholera to himself or some of his family (a wife and five children), and his reply was, 'Sure we might as well be dead as never to have a bit of dung for the garden.'

"Some legislator has said that 'Ireland is an anomaly'—may be the sanitary statistics of this town are another proof of this."

The inhabitants of this town escaped the endemical disease so common in other towns of the south of Ireland, perhaps because, in addition to the pure water and turf smoke, an intimacy with malaria for many generations had at last made them insusceptible to it.

Dr. Pratt, in a paper read before the Surgical Society of Ireland, recently touched upon this same question. After alluding to the widely accepted theory of the actual origin of fever, as proceeding from the decomposition of animal and vegetable matter, he observes that "after an experience of nearly a quarter of a century as an Irish dispensary medical officer, it is his firm conviction that these agencies alone considered cannot be productive of fever of any type. Were it otherwise, Ireland would before this have been depopulated from sea to sea."

"Among the Irish agricultural classes," he adds, "the farm-yards are simply the open spaces either in the front of their dwellings or close behind, the offices, cow-houses, stables, etc., forming a component part of them; the farm-yard manure carefully heaped, in many instances up to the very door, and in such a way that it often becomes a problem to the perplexed doctor, whose aid is desired within, how

p. 884

Dr. Austin Flint,
Practice, edition of 1873:
of Typhoid Fever; "facts appear to show conclusively the spontaneous generation of the causative agent in the great majority of cases." The examples of the disease being communicated he speaks of as "rare instances".

Theory of "Continuous molecular changes" propounded by the late Dr. Snow, of England, may be applicable to the etiology of typhoid fever. Of this I will speak again farther on.

School for Young Ladies
at Burlington N.J. 1874 –
number of years after Patrick,
a typhoid fever
brought to Sunday
into Patrick, supplied for
new edge of Delaware

Dr Ellwood Wilson tells me, 1866, — of 5 cases he had known, — one his son, & two others his own patients, — of a continued fever (Typh-fever of Chambers) hybrid of typhus & typhoid — originating from foul air in a bad privy. Three of the cases, one his son, — occurred at a boarding school at Exeter — and from the privy there was so horrid that the boys made among themselves a rule that any boy who went into the privy with his coat on should not come to the dinner table for two days. The symptoms were those of continued fever, with diarrhoea & tympanitic abdomen, — but also ulcerated throat, — & very offensive odor of the over

Skin and breath. [End of 30th Lect. 1872]

The two last cases occurred in the family of a gentleman ~~stay~~ ~~[illegible]~~ of some wealth living in a fine house in this city. The symptoms recall to Dr Wilson's mind the bowel school cases. — he found on examination that the water closet in the house had no proper trap — Dwelt very badly; so much so that for a considerable time a chamber near it had been left unused as not inhabitable. It seems a strange study pudity for a person of any means to allow such a domestic nuisance — but just so stupid many people are about matters concerning health.

The above cases come nearer to a Murchison's idea of pythogenetic fever than anything I have seen.

Washington City Surgeon General's Office Medical Museum — 1881

Prince of Wales' case near end of 1871:

Typhoid — 1. Ill-drained sewer & water-closet at Scarborough.

Mixed Causation of Enteric Fever often

But I agree with Dr Flint, that most cases occur without any such origin: spontaneously

Dr S B Woods idea of predisposition.

Complicated Problems

for study, — most important

for practice.

Thus the attention to the Malarial element in Typho-malarial, for instance, would have, if it is not impossible may have, made a great difference in its treatment & results. With quinine, many cases recover, I am sure, in which the Periodic element predominates, that would have almost certainly died without.

Ballard — instance, London, 1873 —

Mills — convenience of typhoid fever

Typho-malarial fever — or Miasmatic Typhoid, — of the U. S. Soldiers during the late War.

Drs Leeds & J. J. Woodward have published papers covering it.

All who saw amts of hospital practice during the rebellion are with it.

9-fold in causation

Nature — sometimes even 4-fold. — The elements —

1. Camp-filth & crowd poison — Dr Woodward says had many typhus in U. S. A.

2. Autumnal Malaria —

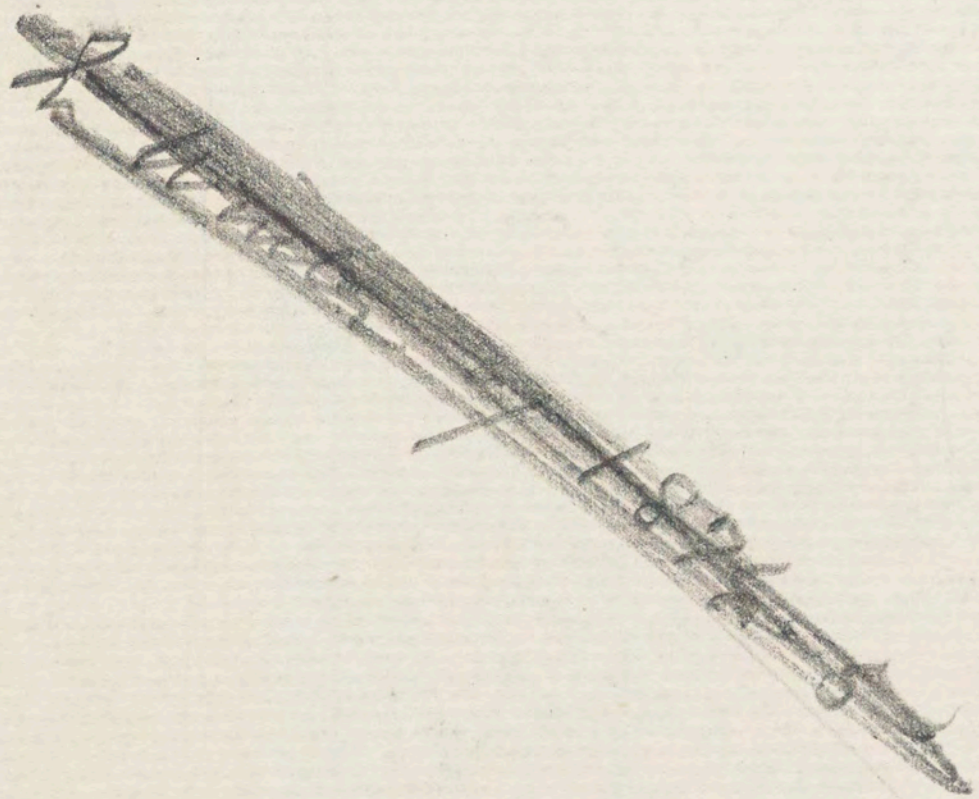
3. The yet unknown predisposing or common special cause of Typhoid fever

4th sometimes, — the Scorbutic Dyscrasia, resulting from its ordinary causes — of insufficient diet, with other privations & fatigues.

Malaria tinges
with the character of
Periodical all the
Diseases of its regions;
at least those regions in which
it has the most intensity
& power.

Thus, ~~intermittent~~ Dr
LaRoche wrote a considerable
work on the relation between
Pneumonia & Malaria:
an interesting subject.

Epidemic typhoid Pneumonia
(two meanings to the term)
One, simple pneumonia of asthenic constitutions;
Bilious Pneumonia
or, "Lung fever"
"Winter fever" of the South.



Dr. B. Lee, w. Pub
Report of Phila. G. Mills
on the Health 1873 says

Cerebro-spinal fever was an exception to the general disease, having carried off a larger number than in any previous year, namely 246, of whom more than three-fourths were minors, and about one-tenth under one year of age. This, as yet, to us mysterious affection appears to show little predilection for any locality or any social class. It has prevailed in Massachusetts during the past year much more extensively than with us, Boston, with its, say, 260,000 inhabitants, having had 212 deaths. Dr. J. Baxter Upham, who presents a valuable report upon the subject in the Report of the Massachusetts State Board of Health for 1873, arrives at the following conclusions, which a study of our tables leads us to indorse with little qualification. "The condition in life and the nature of the locality do not seem to have exerted any positive controlling

Dr. Cameron quotes a "letter recently addressed by Dr. Grimshaw, of Dublin, to Dr. John Dougal, of Glasgow, in which he maintains that cholera has been spread by milk, on the grounds, 1st. That an epidemic which arose in this city (Dublin), seemed to exclude every other source of infection; 2d. That a great many dairy shops in the poorer part of the town were surrounded by little groups of cholera cases; and, 3d. That persons procuring milk at a particular dairy shop, near which stood a pump, the water of which was proved to be a source of the disease, were seized with cholera, which, in several instances, terminated fatally.

But 39 deaths took place from smallpox. While this fact indicates a complete abatement of the epidemic, which carried off 2585 of our population the year before, it also shows the presence of

influence in the production of the disease; neither extreme cold nor heat seems especially to favor its propagation; nor do we find any just grounds for belief in contagion as a specific cause. The cases are distributed among all classes and grades of society, the high and the low, the rich and the poor, locations unexceptionable for situation, open to abundant light and air, and the pent-up hovels of the lowly and wretched, have all contributed to the material of the epidemic. We believe, therefore, that the *primal* origin of the disease is atmospheric, and, for the present, beyond our ken."

ear 1873.
y.
in the Delaware River.

Relative humidity.					
Maximum.	Minimum.	Means.			
		7 A. M.	2 P. M.	9 P. M.	Monthly.
p. c.	p. c.	p. c.	p. c.	p. c.	p.ct.
00	30	75	66	75	72.0
95	38	70	62	68	66.7
00	23	60	47	58	55.0
91	25	65	47	65	59.0
92	25	65	48	65	59.5
85	25	63	43	61	55.6
90	31	67	48	64	59.4
95	35	75	60	72	69.4
92	41	75	55	71	66.9
93	27	72	47	67	61.8
93	31	71	53	67	63.5
96	31	72	62	67	67.0
max	min				
00	23	69	53	67	63.0
00	30	72	62	70	67.9
00	23	63	48	63	57.9
95	25	68	50	66	61.5
93	27	73	51	68	64.1
max	min				
00	11	74	56	71	67.1

Spotted Fever, — or, as

~~Hardly~~ Markly prefer to call it Cerebro Spinal
this is Dr. Stille's designation, in his, which is, no doubt, the best book on the subject.
Meningitis. A name proposed first
in Germany I would prefer to
of the others
either: Cerebral or, Cerebro Spinal Fever.
Typhus; the common
name has been till lately Spotted Fever. It is, as
you no doubt all know, characterized
by suddenness of attack, headache,
opisthotonos often,
Delirium, Stupor, & death in more than
half the cases within from 6 to 24
hours; a Petechial eruption occur-
number, tho' hardly a
-ring in a majority of instances.
in his work on Medical Geography,
Boudin gives account of
Epidemic cerebro-spin. meningitis or cerebral
typhus, — as described first by
Paumier of Paris in 1568.
It occurred at Geneva in 1805; then
in various localities in Europe
from 1806 — 7 — 1811 — 1813 — 14 — 15 — 16 — 1823

1834, 1837 & 1841.

Dr J. Bell (~~Practice~~) quotes accounts of it in Italy in 1839, 40, 41, & at Gibraltar 1844.

Dr Wood in his Practice refers to its having been epidemic in Ireland in 1847.

In this country the name "spotted fever" was first given by Dr Gallup of Vermont in describing its appearance in New England in 1806. Drs North, Hale, Lyman, Strong & others, but more particularly with care Drs Welsh, Jos. Jackson & J. C. Warren wrote a Report pub. in Boston 1813, gave its history: as did also Dr Tiel of Hartford.

the whole history of it has been given in an important work by Prof. Stillé.

Canadaq, N. York, Penna, Ohio, Kentucky & Virginia also;
In 1848 it was in Alabama, Philadelphia 1813
Tennessee, & other parts of the South, as described by Southern medical writers.

New attention was long strongly drawn to it by its breaking out in the neighborhood of this city in February 1863.

Dr Gerhard was the first to describe it, in our College of Phys., 1863.

Others followed; & in the report of Annual Disease Mortality for that year Dr Farrell estimates that about 150 deaths should be credited to it in all our city & suburban districts.

In 1864 & 65 also cases occurred — growing gradually fewer —

most in Manayunk, falls of Schuylkill, Frankford, Germantown

not many in the built up city.

This is remarkable.

Now what is, or can be supposed to be the Causation of this very frightful Disease, — more fatal, sensibly in proportion cases than Cholera? All is, as to this, as yet conjecture.

Boudin —

garrisoned towns —

read always,

in our army, in camps, in several places —

at least here, ~~latter~~ — during the war.

A marked general condition of health, with the circumstances of military regime.

Any hypothesis —

Hetty Swift — Ernst, Hospital —

Mrs Parrish — Mr Phelan

over

But — per contra: a medical gentleman attending my lectures, 1871, informed me that he was on duty for some time during the war at the West Philad. Hospital, & afterwards at the one at 16th & Filbert sts; at both, a number of contract nurses were employed, who had to handle, constantly, the clothing of the soldiers as they came there — folding much of it up to keep for them: yet none of them had cerebro-spinal fever, — which did not occur at either of those hospitals. (Note: our General Hospitals, being so far from the seat of war, the patients sent to them (often, almost generally,) came through other Hospitals nearer the field, — and were more or less cleaned up, — they and their clothes, — and the worst disposed of, — before their reaching here. Still I must accept the interesting facts mentioned as being adverse, as far as they go, to my conjecture, for I would not call it more, as to the possible causation of cerebrospinal fever.)

In N. Y., 1872, C.S. fever in Insane Asylum 6 years from (1871) I am glad to have received from gentleman in attendance in the class some additional facts confirmatory of the view expressed in these lectures as to the personal non-contagiousness of that disease. He mentions that of 17 cases last summer all originated in the City, — several quite near to the Delaware front of the City, — several near Hospital, & elsewhere; and not a new case followed the amphitheatre, & the Penna Hospital, the Municipal Hospital, &

(For Blackboard.)

Causation of Typhus.

1. Crowd-poison, acting in cold or cool climates, in or among human dwellings, camps, jails, or ships, originates typhus.

2. Contagion, from those sick with the fever, extends it.

3. But the contagion of typhus can generally be disarmed by cleanliness and ventilation.

Typhoid Fever.

1. Depressing causes, affecting the nervous system, predispose to it.

2. Foul air and bad drinking water promote it.

3. It is sometimes epidemic or endemic.

4. Its personal contagiousness, even through water, is (~~[illegible]~~ accepted) not established.

5. Abstinence & typhoid fever may be hereditary.

Etiology of Relapsing Fever.

Barely recognized in this country by Dr J. Bard & McClynn in Philadelphia Hospital 1848, — It was earlier & more largely known in Northern Europe — especially in Russia, N. Germany, Sweden, Norway, & Ireland.

Undoubtedly a specific disease. Resembling typhus in its lengthened prodromata without distinct remissions, it yet has more likeness to malarial fever in the sudden determination & recurrence after several days.

Causation still doubtful. "Famine fever" abroad. "Fever nests" in New York & Philada. Contagion proven in New York, according to Reports of 1870. Not in Phila. Hospital as shown.

Open to further inquiry.

Glands purple red, 26 per cent. Phil. Hosp. Wh. 5 Spring

Plague first in France 540 —

Worst, 1347 – 1349 — described at Florence by Boccaccio: Black death.

It killed in Paris 80000; in Provence, 120000.

Leprosy was brought by Saracens into France: & again by returning Crusaders: disappr. in 1624. — Typhus or peste de Hongrie, 16th, 17th century.

Summer average in England
76° & Hunter says in
W. Indies 10° less.

Egypt, 97° summer } average
70° winter

never below 40°

May 24th, highest tide, end
of plague in Egypt & be-
-ginning of it in Constantinople
Clothes of plague patients often
sold & worn —

1813, Malta (Dr Chas. Maclean 1824)
soldiers, gregarious less plague than
scattered inhabitants — orderly, nurses none —

1665 pest 10 months in London – 97,000 thousands died –

1349 worst of it —

Mr Coventry, Edin. Med. & Surg. Journ 1822, wrote against contagion of plague

Aretous first speaks of contagion

Hippocr. Galen not –

Modern, Tales of Boccaccio first — then book by Fracastorius 1546 – R. Mead a strong advocate of it —

1577 Black assize London

Lord Bacon suggestion caused the 300 deaths –

Over 95° in shade.

In N. York, 1870, in the week ending July 23d, — very hot weather of unusual continuation, — 645 deaths under 5 years of age — nearly 400 from cholera infantum & diarrhoea alone.

Same week in Philada. — 162 deaths (out of 601 in all) from chole infantum & diarrhoea.

Bad diet no doubt a contributive, but I believe not a principal cause

Against contagiousness of Plague; 1st — it has its regular Seasons; 2nd Sanitary police kills it. Local

always failed of its purpose, but by improved **sanitary arrangements.**

~~Further than this,~~ *Cairo* affords an illustration of the *dependence of plague upon* **local** *conditions of* **malaria.** atmosphere. This great oriental capital, before the time of Mohammed Ali Pasha, many times lost tens of thousands of its inhabitants by visitations of plague. That wise viceroy, by costly drainage, transformed an immense swamp, in the heart of the city, and the receptacle of all its filth, into a park or square (the Esbekieh); and now *Cairo is free from plague.*

Dr C. Caldwell (25 or 30 years since)

Cholera infantum is a disease whose causation has, undoubtedly, three elements:—

1. Intense summer **heat.** Mortality varies with the thermometer.
2. The **atmosphere** of *large* **cities.**
3. The *peculiar* **susceptibility** of *infants.*

Of these, the second is the most under control, by removal to the pure air of the open country.

Country air, then, is *the prophylactic* (preventive), and also one of the principal *remedies* for this severe and often fatal complaint of infancy. Summer Camps.

Dysentery (endemic or epidemic). Malaria? Will Surgeons be Exempt?

Erysipelas is frequently *endemic,* especially in *large surgical hospitals.* As to its causation, a *minority* of cases only occur **idiopathically**; *i.e.* without any local wound, injury, abscess, etc., to originate cutaneous inflammation. Most cases are **traumatic**; *i.e.* connected with injuries of the surface of some kind. Yet very many wounds, abscesses, surgical operations, etc., may occur without any erysipelas.

There appears, then, to be for its production required—

1. A peculiarity of the **atmosphere.**
2. A morbid tendency of the patient's **system.**
3. Mostly, but *not always*, a **lesion** *of the skin.*

The *accumulation of the effete organic material thrown off in connection with inflammation* seems to be the source of that contamination of the air which predisposes to erysipelas. And probably the accumulation in the *blood* of the *same material* constitutes the cause of *individual* proclivity to it; while the presence of the very process of inflammation upon the surface is its most usual *exciting* cause.

Analogy, or, more correctly, *affinity*, of a very close and important kind, exists between *erysipelas* and *puerperal fever.** Both of these diseases occur very often at the *same time* and the *same place.* Similar circumstances—those of the crowding together of human beings, the bodies of some of whom are in a state of disease—will produce *erysipelas* in persons of either sex who have suffered some lesion of the surface, or *puerperal fever* in parturient women.

This etiological association of these two diseases is sustained by their *pathological* analogy or relationship. The *traumatic* state of the *uterus* after childbirth, in which blood, mucus, etc., may collect and become decomposed, is parallel to the condition of injury or inflammation which is the usual exciting cause of erysipelas upon the skin. The further pathological resemblance of these affections may be expressed thus:—

---

* Distinguishing, of course, between this, as an *epidemic* or *endemic* disease, and *sporadic* puerperal *peritonitis.*

My experience in Pa. Hospital with labor cases.

Erysipelas is an acute febrile disease, in which a peculiar diffusive inflammation is a prominent characteristic; the seat of this inflammation being the *skin, areolar tissue*, etc.

Puerperal fever is an acute febrile disease, in which a peculiar diffusive inflammation is a prominent characteristic; the seat of this inflammation being the *uterine veins, peritoneum*, etc.

Puerperal fever a peritonitis, — or a specific "Puerperal fever"?

Lastly, many cases have occurred, in which there was reason to believe that an obstetrician, going from the chamber of a patient with erysipelas to that of a lying-in woman, has been the means of production of puerperal fever in the latter. The most thorough disinfecting means, with change of clothing, etc., ought certainly to be resorted to, if, in knowledge of this fact, the practitioner ventures to interchange his visits between patients under such circumstances. Dr Rutter & Dr L. D. Harlow.

The theory of "**continuous molecular changes**" appears to apply to the infection of puerperal fever and erysipelas, ~~but to expatiate upon this would occupy us too long a time.~~

Plate 1 vols

Diphtheria is a name ~~recently~~ given to a disease which, although described by some ancient writers, and occurring at intervals in different countries of Europe for many centuries, has nevertheless increased in the frequency and extent of its epidemic visitations within a few years. It is characterized by fever and debility, with pseudo-membranous inflammation of the fauces, tonsils, and pharynx, extending in some cases into the larynx.

The etiology of diphtheria remains, as yet, in great obscurity. The leading facts are, that it is usually **epidemic,**

Cog wheel — diamond dust Sand-blast — Skin-grafting — "Graft-theory of Disease"

PART II.

SEMEIOLOGY.

and that its visitations are remarkably **limited**; "acting with intensity in *confined centres;* as a small village, a crowded school, a numerous family;" a sort of *domestic pestilence.*

Like other zymotic diseases, it attacks with greatest malignancy those places in which public and private hygiene are most neglected. The poor are therefore the greatest sufferers. But it is not confined to their dwellings. The effeminating influences of luxury and indolence invite it also to the homes of the affluent, where debility of constitution appears to aid or supply the place of a foul atmosphere as a predisposing cause.

Diphtheria has prevailed under very various circumstances of situation, soil, climate, and season. "The only cosmic influences which appear to exhibit any promotive agency in its development are excessive *alternations* of temperature, and of the barometric state of the atmosphere."

In the combination of a peculiar and diffusive inflammatory affection of an epithelial (mucous) surface with a constitutional febrile affection, diphtheria presents some analogy, deserving of attention, to erysipelas. It is probable that the infection of the two diseases will be found to have a similar rationale, and to be subject to the same laws of development and prevention.

Contagion has been urged by Guersent, Bretonneau, Trousseau, and others, as explaining the mode of transmission of diphtheria. But the experiments of Trousseau himself, and those of Harley, failed entirely to verify this view; and the apparently self-determining manner of *migration* of the disease (*e.g.* in England from the southeast to the northwest in 1857–9) presents difficulties in the way of this theory of personal transmission, analogous to those connected with the history of cholera. So that even those who insist most strongly upon its contagiousness are obliged to admit, that the movements and invasions of diphtheria are **by no means dependent** upon such a mode of conveyance.

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Contagion has been urged by Guersent, Bretonneau, Trousseau, and others, as explaining the mode of transmission of diphtheria. But the experiments of Trousseau himself, and those of Harley, failed entirely to verify this view; and the apparently self-determining manner of *migration* of the disease (*e.g.* in England from the southeast to the

Parker Lecture 1871-2 Mainwaring

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northwest in 1857–9) presents difficulties in the way of this theory of personal transmission, analogous to those connected with the history of cholera. So that even those who insist most strongly upon its contagiousness are obliged to admit, that the movements and invasions of diphtheria are **by no means dependent** upon such a mode of conveyance.